CENTER FOR TAX AND ACCOUNTING RESEARCH

Center for Risk Management

TAXATION, ACCOUNTING, AND FINANCE

TAF WORKING PAPER

No. 77 / December 2022
revised September 2024

Firms' Tax Misperception

Fochmann, Martin / Heinemann-Heile, Vanessa / Huber, Hans-Peter / Maiterth, Ralf / Sureth-Sloane, Caren

PADERBORN UNIVERSITY

www.taf-wps.cetar.org.

Firms' Tax Misperception*

Martin Fochmann† Vanessa Heinemann-Heile‡ Hans-Peter Huber§
Ralf Maiterth¶ Caren Sureth-Sloane‖

September 2024

Abstract

Firm managers consider tax implications when making business decisions. Their perception of the tax burden shapes how they incorporate taxes into their reasoning. We investigate how decision-makers in small and medium-sized firms perceive their firm's tax rates and how their perception differs from actual tax rates. We quantify their misperception of average tax rates (ATR) and marginal tax rates (MTR) and identify the main drivers of these misperceptions. We collect survey data on perceived tax rates of German firms of different legal forms and contrast them with actual tax rates derived from administrative tax return data. We find that the share of firm managers who considerably misperceive their ATR (MTR) is more than 66% (55%). We find that sole proprietorships and partnerships considerably overestimate their ATR on average. Corporate decision-makers, for their part, tend to overestimate tax rates on retained profits but underestimate ATRs and MTRs on distributed profits. Irrespective of the legal form, our results suggest that tax misperception is primarily influenced by the firm size, the complexity of the tax system, a lack of tax literacy, and a dissatisfaction with the tax system. We also find that misperception is likely to distort investment decisions, especially under a progressive tax schedule. Policymakers and researchers need to be aware of firms' tax misperception when discussing and evaluating tax policy.

Keywords: Tax Misperception, Business Taxation, Tax Literacy, Tax Policy, Business Decisions, Tax Rates

JEL classification: H25, H32, D91, M41

*We thank Harald Amberger, Ulf Brüggemann, Theresa Bührle (discussant), Kenny Dekoster, Tami Dinh, Sebastian Eichfelder, Dennis Fehrenbacher, Margaret Fong, Joachim Gassen, Nathan Goldmann, Till-Arne Hahn (discussant), Inga Hardeck, Jost Heckemeyer, Svea Holtmann (discussant), Peter Hongler, Ken Klassen, Johannes Lorenz, Eva Matthaei, Jan Riepe, Davud Rostam-Afshar, Deborah Schanz, Zvi Singer, Barbara Stage (discussant), Arthur Stenzel, Jesse van der Geest, Johannes Voget, as well as the participants in the CAAA Annual Conference 2023, the Ghent Conference on International Taxation 2023, the Scientific Seminar, Département de sciences comptables at HEC Montréal in 2023, the ACA Research Seminar at University of St. Gallen (HSG) in 2023, the 2022 EAA Annual Congress, the 2022 Virtual Doctoral Tax Brownbag at Catholic University of Eichstätt-Ingolstadt and Paderborn University, the 2021 arqus Annual Meeting, the 2021 DIBT Meeting at WU Vienna, the 2022, 2021, and 2020 TRR 266 Annual Conference, the 2020 Faculty Research Workshop at Paderborn University, the Doctoral Seminars at Free University of Berlin, Humboldt University of Berlin, and Paderborn University and of the Taxation and Transfer Pricing working groups of the Schmalenbach-Gesellschaft for their valuable feedback. Heinemann-Heile, Huber, Maiterth and Sureth-Sloane are grateful for funding by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) – Project-ID 403041268 – TRR 266 Accounting for Transparency.

†Flick Gocke Schaumburg, martin.fochmann@fgs.de
‡Paderborn University, vanessa.heile@upb.de
§Humboldt University of Berlin and EY, h-p.huber@hu-berlin.de
¶Humboldt University of Berlin, ralf.maiterth@hu-berlin.de
‖Paderborn University, Vienna University of Economics and Business, caren.sureth@upb.de

1 INTRODUCTION

We investigate the extent and drivers of the tax misperception of firm managers. We define tax misperception as the difference between the *perceived tax rates* of firm decision-makers, obtained from a survey, and the *actual tax rates* determined based on firm characteristics and administrative tax return data (e.g., Enrick, 1963; Auld, 1979; Gideon, 2017). Identifying and quantifying firms' tax misperception is crucial for understanding how managers (mis)perceive the tax system and tax reforms. It is also crucial for understanding how tax rates affect firms' business decisions. Therefore, we also examine how misperception of tax rates is reflected in the desire of firm managers for tax cuts and in their investment decisions.

Studies on the impact of taxes on decision-making typically refer to *actual tax rates* (e.g., MacKie-Mason, 1989; Graham, 1996; Jackson and Hatfield, 2005; Faccio and Xu, 2015; Dobbins and Jacob, 2016) and abstract from potential tax misperception among firm managers, who we will refer to for succinctness' sake as "firms" throughout this study. This is surprising because the literature on individual tax behavior shows, first, that tax misperception is widespread and, second, that it affects behavior (Schmölders, 1960; Jackson and Hatfield, 2005; Blaufus et al., 2015; Hoopes et al., 2015; Rees-Jones and Taubinsky, 2020; Gallemore et al., 2024; Moore and Slemrod, 2021; Stantcheva, 2021 and, for an overview, Blaufus et al., 2022). Decision-makers base their decisions on their perceptions derived from available information and their tax literacy,[1] and the *perceived tax rate* may substantially differ from the *actual tax rate*. This discrepancy could bias both business decisions and decision-makers' attitudes toward tax reforms. Along these lines, Gallemore et al. (2024) show that firm expectations about the U.S. Tax Cuts and Jobs Act, rather than the actual design and implementation of this tax reform, shaped firms' investments. Additionally, Neuman et al. (2020) highlight the relation of inaccurate information processing, tax uncertainty and corporate tax risk. Hence, it is important to understand how and to what extent firms misperceive tax rates, what drives their misperception, and how this misperception distorts their behavior.

To understand the magnitude and heterogeneity of firms' misperception, we surveyed German small and medium-sized firms (SMEs). We derive perceived tax rates from this survey and compare them with actual rates calculated based on firm characteristics, the tax schedule, and administrative tax return data. Our three-step approach allows us to capture the extent of tax rate misperception. We examine the heterogeneity of misperception across firms as well as the share of overestimating and underestimating firms. Our approach allows us to identify the main drivers of tax rate misperception and the types of firms that are most affected.

[1] Following the approach of Genest-Grégoire et al. (2017, p. 4), we define *Tax Literacy* as "having the knowledge, skills and confidence to make responsible tax decisions." Below, we distinguish between *Subjective Tax Literacy*, which includes self-stated tax knowledge reported in the survey, and *Objective Tax Literacy*, which includes revealed knowledge of basic tax concepts.

In a first step, we ask firm decision-makers in our survey to report the average tax rate (ATR) and the marginal tax rate (MTR) for a profit of a fictitious firm that resembles theirs. We provide individually simulated profits based on firm characteristics provided by the respondents, such as number of employees, industry, and legal form. Thus, respondents are expected to be familiar with this simulated firm profit. To quantify their misperception in a second step, it would be ideal to contrast the perceived tax rates with the actual rates of the surveyed firm extracted from tax return data. However, we cannot match our survey participants with taxpayers in the tax return data or other data sources. To overcome this limitation, we calculate the *actual tax rate* of the surveyed firms by applying the income or corporate income tax schedule to the simulated profit and additionally use administrative tax return data for sole proprietorships and partnerships.[2] The tax return data provide extensive tax-related information for sole proprietorships and partnerships, and we extract details about additional income and special expenses that could affect the tax base and, in turn, the firms' progressive income tax rate.

Our approach allows us to quantify tax rate misperception and analyze its heterogeneity across firms. It also allows us to identify the main drivers of tax rate misperception and to identify the types of firms that are particularly affected by it.[3] Additionally, we examine the relation between the perceived ATR and the perceived MTR. Both tax rates are important to firms, but they serve different purposes. While ATRs provide information about a firm's tax burden relative to peers, MTRs matter for business decisions (Graham, 2003; Erickson et al., 2020). Graham et al. (2017) show that large firms often use inappropriate tax rates when making business decisions. Their findings suggest that, despite the expected high level of tax literacy among large firms, their decision-makers do not appropriately account for taxes.

Our results reveal that SMEs of different sizes and legal forms do considerably misperceive their tax rates. We find that over 66% (55%) of the firms misperceive their ATR (MTR) if we define *perceived tax rates* as accurate only when they do not deviate more than five percentage points from the *actual tax rate*. Sole proprietorships and partnerships better estimate their MTRs than their ATRs and show a fairly consistent pattern of misperception: ATRs are overestimated, while MTRs are underestimated on average.

Consistent with our expectations, corporations better estimate their tax rates on retained earnings. This can be explained by the straightforward flat corporate tax. However, we find that about 45% of corporations

[2] Following Gideon (2014, p. 1), who refers to relying on firms' tax return data as the "gold standard measure", we use administrative tax return data in our calculation of the actual tax rate. The tax return data is anonymized such we cannot link our survey data to firm tax returns. To obtain firms' actual tax rates, we could have asked the respondents about their firm's taxable income and tax burden. However, we decided not to for two reasons. First, we expected responses to be noisy because self-reported profits and losses might be erroneous and relevant details might be unknown to our respondent. Second, respondents might be reluctant to disclose this private information which then would result in non-response. We use this indirect approach to obtain the actual tax rates of sole proprietorships and partnerships.

[3] We use a broad definition of "misperception" that does not distinguish between unintentionally and intentionally stated biased tax rates reported in the survey. For more details on this aspect, see Section 3.

misperceive their ATR and MTR by more than five percentage points above or below the actual rate. The share of corporations that overestimate and underestimate their ATR and MTR is roughly equal. The picture differs for distributed profits. Here shareholder taxation adds a layer of complexity to corporate income taxation. We find that corporations tend to severely underestimate the combined tax rates. This is an important finding for incorporated SMEs, which are often owner managed, as the tax burden of their business activities should be assessed through both layers of taxation, that is, at both the firm and shareholder levels. The share of corporate decision-makers who misperceive the ATR and MTR on distributed profits amounts to over 65% of our respondents, presumably due to the higher complexity of taxation at the corporate and the shareholder levels.

To examine the influence of firm and personal characteristics on firms' tax rate misperception, we conduct regression analyses. Our results indicate that, in addition to differences in the tax system between corporations and non-corporations, the respondents' personal characteristics matter. Specifically, their tax literacy[4] and satisfaction with the tax system are negatively associated with ATR and MTR misperception. Initial analyses show that misperception of tax rates can harm entrepreneurs' decision-making, leading to distorted investment choices. Moreover, firms' perception of being overtaxed strongly correlates with overestimation of tax rates, highlighting the importance of considering misperception in tax policy discussions.

The literature almost exclusively analyzes individuals' tax misperception. For example, Schmölders (1960), a pioneer in this field, reports that about 50% of German individuals surveyed overestimate their ATR, 20% underestimate it, and about one-third correctly report it. Enrick (1963) notes that U.S. taxpayers tend to underestimate their ATR. Van Wagstaff (1965) confirms these results in a survey of U.S. employees and finds that about 10% have accurate beliefs about their ATR. However, overestimates and underestimates are almost balanced. Auld (1979) surveys Canadians and finds that low- and high-income respondents significantly overestimate their ATR, while members of the middle-income group estimate theirs almost accurately. Ballard and Gupta (2018) and Gideon (2014, 2017) find in surveys that U.S. individuals overestimate their ATR, on average. Moreover, Stantcheva (2021) finds that U.S. individuals tend to misunderstand the degree of progressivity of the U.S. tax system; i.e., they perceive less progressivity than is codified. Studies of individuals' ATRs for different income categories predominantly show a tendency to overestimate ATRs at low incomes and the opposite for higher incomes (Blaufus et al., 2015; Rees-Jones & Taubinsky, 2020). Williamson (1976) finds respondents overestimate ATRs in all income categories.

For MTRs, Gensemer et al. (1965) find, in their survey of U.S. high income earners, that about 30% of the respondents are unaware of their MTR. A survey of Scottish managers and workers by Brown (1969)

[4] Following Genest-Grégoire et al. (2017), *Objective Tax Literacy* includes revealed knowledge about basic tax concepts.

highlights that 80% do not report their MTR accurately, mostly overestimating it. Rupert and Fischer (1995) find consistent evidence that less than 10% of their respondents accurately report their MTR. According to Fujii and Hawley (1988), only one-third of their U.S. respondents report their MTRs accurately. Gideon (2017) likewise shows that U.S. individuals with higher incomes underestimate their MTRs. Blaufus et al. (2015) find that German individuals overestimate (underestimate) MTRs for a given low (high) income. They also find that ATRs are often confused with MTRs. Along similar lines, de Bartolome (1995) finds that respondents confuse ATRs and MTRs. However, all of these studies focus on individuals in non-business contexts.

We study firms. Although their decisions are ultimately made by individuals, there are four reasons why misperception in firms might differ from what we know about individuals. First, firms are subject to their own specific tax environment (code and regulatory framework). In our setting, firms must consider the corporate income tax or personal income tax but also other firm-level taxes, such as business or trade taxes. Compared to individuals, business income taxation might be more complex (e.g., McKerchar et al., 2005; Kamleitner et al., 2012; Hoppe et al., 2023). Second, firms must compete. This means that a misperception of tax rates that leads to suboptimal investment decisions can become a competitive disadvantage. Getting the tax picture right is therefore crucial for them. Third, managers are expected to make decisions consistent with incentive schemes (Armstrong et al., 2012) that might be affected by taxes. Therefore, getting the tax picture right might be more important for managers than for individual taxpayers. Fourth, many individual taxpayers only passively receive information about the amount of (payroll) taxes paid through their pay stubs. By contrast, firm owners must actively calculate, file, and pay their taxes (Kamleitner et al., 2012; Brühne and Schanz, 2022). Therefore, we assume that the firm owners are usually more involved in tax compliance. This view is supported by (Coolidge et al., 2009), who show that only 11% of surveyed SMEs outsource all of their tax compliance work. Against this background, a closer look at firms is necessary to understand how they misperceive taxes and what drives their misperception.

Some studies of tax misperception focus on individuals with specific kinds of business income. For example, Schmölders (1960) is the first to examine the tax perceptions of entrepreneurs. He finds that the majority of surveyed farmers and self-employed individuals overestimate their ATRs. Although they must pay income tax like employees, they are subject to a more pronounced misperception. In contrast, Blaufus et al. (2015) finds that the self-employed and employees are very similar in their tax (mis)perceptions. To the best of our knowledge, Hundsdoerfer and Sichtmann (2009) is the only study on entrepreneurs' MTR (mis)perceptions. They investigate self-employed German physicians' perceptions of their MTR. About 25% of the respondents report MTRs that do not exist according to German tax law. Graham et al. (2017) provide

survey evidence that tax managers in large firms often use the ATR or the statutory tax rate, instead of the MTR, in their decision-making. Their findings suggest that, even in large firms with in-house tax departments, decision-makers struggle to make appropriate use of tax information. Relatedly, in an experimental study, Amberger et al. (2023) find that in time-constrained scenarios, decision-makers in firms tend to overestimate the importance of tax rate information, compared to more complex tax base information, when deciding between equity and debt financing. However, while Graham et al. (2017) and Amberger et al. (2023) both find evidence of an inappropriate use of tax information in business decisions, in contrast to our study, they do not analyze the magnitude of tax rate misperception and the drivers of this misperception.

We are the first researchers to quantify tax rate misperception in firms, identify its drivers, and provide evidence on the tax rate choices of SME decision-makers, e.g., investment decisions as well as on firms' desire for tax cuts. Our contribution is fourfold. First, we provide a measurement approach that combines survey evidence with simulations based on administrative data, allowing us to quantify firms' tax rate misperception. Second, we connect analyses of individuals' tax rate misperception and managers' inappropriate use of tax rates in large firms (Graham et al., 2017) by studying misperception in SMEs and mostly private firms. Our sample provides the rare opportunity to study the firms that contribute a large share to OECD economies but have been understudied (OECD, 2022). Third, we not only show that tax rate misperception occurs in firms but also identify its drivers. Fourth, our results highlight the role of tax rate misperception in business decisions. By quantifying misperception and linking it to the use of inappropriate tax rates in business decisions, we extend the literature. In doing so, we provide insights that can help predict firms' behavior in response to taxes and tax reforms and help explain the heterogeneity of firms' tax behavior. We also highlight the importance of tax rate misperception in firms' desire for tax cuts.

Our research provides a measure of tax rate misperception and first insights into its consequences. In this sense, our findings serve as a starting point for future empirical analyses of tax misperception, e.g., in prominent areas of the tax code, such as anti-tax avoidance regulations and tax incentives and their effects on compliance and investments. Our analyses also suggest that poor understanding of tax regulations and tax burdens not only might undermine the effectiveness of tax reforms but also may distort voting. Our results can contribute to the development of strategies to improve the transparency of tax regulations. Reducing tax complexity and increasing tax literacy among SMEs seems a promising avenue in this respect.

2 SURVEY DESIGN AND SAMPLE

2.1 Survey Design

Our results are based on data collected from German SMEs via an online questionnaire. The questionnaire uses various methods for identifying misperception (e.g., Schmölders, 1960; Hundsdoerfer and Sichtmann, 2009; Blaufus et al., 2015; Graham et al., 2017). We conducted the survey using the online application LimeSurvey[5] in the period between January 11, 2021, and April 22, 2021. To obtain a rich sample, we approached firms with the help of various intermediaries, such as chambers of handicraft, manufacturing and trade; financial institutions; and consulting firms. We approached firms[6] either directly by e-mail or via our intermediaries, which sent out e-mails, or used their newsletter or website to contact the firms. We sent out a reminder where possible. We received answers from persons responsible for the firms' tax issues, such as the owners, heads of finance, and managing directors. As we distributed our questionnaire partially via intermediaries, we could not determine an overall response rate.

Our survey addresses the German tax system. We asked for all profit-oriented taxes. For sole proprietorships and partnerships, we refer to a compound income tax, which is made up of the progressive income tax plus solidarity surcharge[7] and the trade tax. The trade tax rate is levied on profits but can be offset against the income tax[8] and is thus entirely or at least largely compensated by an income tax credit. In case of corporations, taxation is also based on a compound tax, including the flat corporate tax, plus the solidarity surcharge and a not-offsetable trade tax. This compound corporate income tax corresponds to the corporate tax in other countries and amounts to approximately 30%. Although we concentrate on the German tax system, our results are relevant also for other countries, since Germany's tax law is based on the internationally common dual system of business taxation, shown in Figure 1 (Endres & Spengel, 2015).[9]

< Insert Figure 1 about here >

To develop the questionnaire, we gathered feedback upfront from several of our intermediaries. In addition, we conducted pre-tests with selected intermediaries, tax practitioners and students with knowledge of business taxation. We use filter questions at various points to ensure that small firms, in particular, only receive questions relevant for them. We also filter questions depending on the legal form. The final

5 For more information, see https://www.limesurvey.org/de (08-19-2022).

6 We are aware of the fact that individuals respond to the survey on behalf of the firm. But for convenience and better readability, we refer to the firm as survey respondent, if not otherwise stated.

7 The solidarity surcharge is based on the income tax and amounts to 5.5% of the income tax (Section 4 Solidarity Surcharge Code).

8 Section 35 German Income Tax Code.

9 Sole proprietorships and partnerships are subject to the so-called pass-through principle, while corporations are subject to the separate entity principle.

questionnaire consists of seven sections. Depending on firm characteristics and response behavior, the number of questions to be answered may vary.[10] Our questions address seven aspects of firms and their taxation. (1) We ask for firm characteristics, such as legal form, number of employees, sales. (2) For the "tax burden block", we present a visualization of the legal form-specific taxation of firms. For sole proprietorships and partnerships, we illustrate the taxation with the trade tax and a transparent income tax. For corporations, we present the two-level taxation, with corporate income tax and trade tax at the corporate level and dividend income tax at the shareholder level (see Section 3.2 for details). Against this background, we ask the respondents to state their firm's ATR and MTR for a profit that we simulate and provide for each respondent individually based on relevant information about that respondent's firm. We ask respondents from corporations to report the ATR and MTR in two different settings, full retention of profits and full distribution to domestic shareholders (natural person). For sole proprietorships and partnerships, we do not apply this differentiation, as our sample firms' taxation does not depend on their distribution strategy.[11] To clearly emphasize the difference between the ATR and MTR and to avoid confusion, we ask respondents two separate questions. In case of the ATR, we ask about the tax on the given profit. When asking for the MTR, we explicitly point out that we are interested in the additional tax on a profit increase. (3) We ask for firms' tax rate relative to peers. (4) We ask about whether and how firms consider taxes and specific tax rates in their business decisions. (5) We ask about the relative share of tax compliance costs in the firm's total compliance costs. (6) We ask about the complexity of the tax system, the provision of tax-relevant information by tax authorities, and trust in the government's expenditure policies. (7) We ask whether their firm is, has been, or is expected to be in a profit or loss situation and ask for several personal characteristics of the respondent.[12]

Our research design has limitations. We cannot rule out that our results are influenced by a self-selection bias and that respondents did not answer the questions seriously. However, as the median (mean) response time of around 14.1 (18.1) minutes is close to our estimate of 15 minutes, we believe the questionnaire was taken seriously. Also, since the survey grants full anonymity, we expect honest answers. As we used neutral language, framing effects should be minimized. We supplemented terms that might be unclear with explanations or visualizations to avoid differing interpretations by respondents. All this and a battery of robustness tests gives confidence about the high quality of our data.

[10] See Appendix A1 for details of the survey.

[11] However, sec. 34a German Income Tax Code constitutes an exemption to this rule and allows firms to apply a preferential taxation for retained earnings. But, because of its complexity, this tax option is almost never exercised, and we excluded the few firms that chose this tax option from our sample.

[12] There are several reasons why we split the demographics into two parts, one in the beginning and one in the end. First, we need some firm characteristics for the determination of a firm's profit. Therefore, we ask for these characteristics upfront. Second, characteristics questions are easy to answer, which allows for a convenient start in the questionnaire. But so as to not bore respondents with demographics, we ask the second part at the end our survey. Furthermore, some easy-to-answer demographic questions are placed at the end to account for our relatively long survey.

2.2 Survey Sample

We survey SMEs, which allows our results to be extrapolated to other big economies around the world. Examinations of the United States, Canada, United Kingdom, and Germany show that SMEs are by far the biggest group of businesses (OECD, 2022). SMEs are responsible for more than 50% of the gross domestic product in most OECD countries (International Labour Organization, 2019). Yet even though SMEs and especially craft enterprises are an important factor to countries' economy, they have been hardly examined in the literature. In addition, our sample includes many private firms that, despite their major role in the business landscape (Allee and Yohn, 2009; Lisowsky and Minnis, 2020), have rarely been considered in the literature. With this study, we thus answer the calls of, for example, Hanlon and Heitzman (2010) and Lisowsky and Minnis (2020), to investigate this highly relevant sector.

In Table 1, we compare our sample with the official German Business Register 2020 (German Federal Statistical Office, 2020).

< Insert Table 1 about here >

The table shows a high degree of consistency between the sample companies and the German corporate landscape, which underscores the quality of the data. We received a total of 1,806 questionnaires back from respondents, of which 657 were completed in full. Since we focus on SMEs (less than or equal to 250 employees and sales of less than or equal to €40,000,000),[13] we exclude firms that do not qualify as an SME. We further exclude those with characteristics that, for example, allow them to apply a special tax treatment. That is, we exclude (1) firms that are a member of a tax group or fiscal unity, (2) sole proprietorships and partnerships that opt to be taxed like corporations (Section 34a German Income Tax Code) similar to the U.S. Check-the-Box regime, (3) firms that state they are partly or entirely exempted from the German trade tax, (4) firms with profits below €20,000,[14] (5) firms that report their ATR but not their MTR in the survey, and (6) firms that we cannot match in our propensity score matching (see Section 3.2.1).

This leaves us with a final survey sample of 493 German firms. In Table 2 we provide summary statistics of all survey variables.

< Insert Table 2 about here >

54.8% of these firms are sole proprietorships, 21.3% are partnerships (including mixed forms[15]), and

[13] This is in general accordance with Section 267 of the German Commercial Code (HGB).

[14] We exclude firms with extremely low profits since we assume that this is only secondary income and therefore their actual income is not reliably predictable.

[15] Mixed forms are a special legal form that combines characteristics of partnerships and corporations such as GmbH & Co. KG and are taxed like partnerships.

23.9% are corporations. Firms from the craft sector are particularly well represented (87.8% of our sample). Over 86% of our firms reported a profit in 2020. Around 92.1% make use of the services of an external tax consultant, and 1.4% have their own tax department. Of our respondents, 77.9% are male, 20.1% female and 0.2% diverse; 97.1% hold an executive position; 75.9% claim to have tax knowledge; 49.2% of them acquired their tax knowledge through training or studies, and 50.8% qualify as self-taught.[16]

3 MEASURING TAX RATE MISPERCEPTION

We quantify firms' ATR and MTR misperception by contrasting the *perceived tax rate* extracted from our survey with the *actual tax rate* determined based on information from different sources, such as administrative tax return data, data from the German Federal Bank, and the tax schedules as codified in the income tax code, corporate income tax code, and the trade tax code. The difference between the perceived and actual tax rates below denotes the extent of firms' ATR/MTR misperception:

$$ATR\ Misperception = Perceived\ ATR - Actual\ ATR, \tag{1}$$

$$MTR\ Misperception = Perceived\ MTR - Actual\ MTR. \tag{2}$$

We assume that this misperception is unintentional, i.e., not due to strategic responses. Even though we cannot rule out the possibility that respondents may be motivated by the hope or belief that they can influence the results of our study and thus indirectly influence tax policy in their favor, we consider this option unlikely. Respondents were informed that the results are for research, and they could not foresee whether the results would be incorporated into the political discourse.[17]

[16] Following the definition of Genest-Grégoire et al. (2017), self-stated tax knowledge within the survey is referred to as *Subjective Tax Literacy*.

[17] Our findings also support these assumptions. We find a strong negative correlation between tax literacy and misperception, suggesting that misperception is unlikely to be strategic.

3.1 Perceived Tax Rate

The variable *perceived tax rate* describes each firm's answer when asked about its ATR and MTR. Since data on firms' profit is highly sensitive, we refrained from asking about that directly to avoid high dropout rates. Instead we asked for firm characteristics that enabled us to simulate and provide a profit mimicking the actual profit of each firm in the survey. Accordingly, we asked firms to report their ATR for this *provided profit*. To determine the MTR, we asked firms to report the tax rate on a 10% increase of the provided profit.[18] Our calculation of the *provided profit* is based on aggregated annual financial statement data from the Deutsche Bundesbank,[19] which contains average profits per employee at industry-level for different firm sizes[20] and legal forms. We used the latest available data from the Deutsche Bundesbank from 2018 and did not extrapolate the data to 2021 to avoid the impact of the coronavirus crisis. The *provided profits* in the survey were simulated on the basis of the median profits of firms in the same industry, with the same legal form and the same number of employees. The *provided profits* were automatically generated for each firm based on the respective company characteristics reported in the survey. We used median profits to avoid excessively high default rates and eliminate distortions, due to abnormal, highly fluctuating company profits. We assume that asking the firms about the tax burden of a median profit ensures that the respondents are familiar with this profit and thus able to provide an educated guess. The use of such a familiar profit is also helpful in that we are interested in the participants' perception of their tax burden rather than their ability to calculate tax burdens.[21]

3.2 Actual Tax Rate

Determining the *actual tax rate* as a benchmark is challenging, as most databases do not cover large parts of our sample firms. The most favorable option would be to apply the "gold standard approach" (Gideon, 2014, p. 1) and to compare *perceived tax rates* with rates derived from tax return data. However, German tax return data of firms (as well as of individuals) is only available in an anonymized form not allowing to identify single firms. Given the structure of our sample (SMEs, including many sole proprietorships and partnerships), we also cannot employ tax information provided in financial statements because the respective data is often missing, due to limited disclosure obligations of these firms. Similarly, for corporations, we mostly cannot exploit financial statement tax information, since most of them did not agree to our request to match the

[18] In addition to indicating the 10% increase, we also specify the increase in € (i.e., the absolute amount of the increase) to avoid any confusion with the percentage figure only.

[19] We thank the Research Data and Service Center, in particular Prof. Dr. Stefan Bender, for providing the data.

[20] We refrain from using sales as an alternative measure of firms' size, since sales are clustered in more inaccurate size categories.

[21] The phrase "*their* tax burden" is used in this approach primarily for simplification purposes and reduces the complexity of the question without changing its content.

survey data with their financial statements. Hence, we must infer firms' tax rates using other sources (see Sections 3.2.1 and 3.2.2). Because of the differences in tax regulations applicable to sole proprietorships and partnerships on the one hand and corporations on the other, we develop legal form-specific approaches to determine *actual tax rates*.

3.2.1 Sole Proprietorships and Partnerships

Determining the *actual tax rates* of sole proprietorships and partnerships is not straightforward, due to legal form-specific tax rules in Germany. Sole proprietorships and partnerships are subject to the so-called pass-through principle; i.e., firms' profits are attributed to firm owners and taxed according to their individual income tax rate. Firm owners' profits are included as business income in their *Taxable Income*, which is subject to a progressive income tax schedule[22] (including solidarity surcharge).[23] Since the *Taxable Income* does not include only business income but also other categories of *(Additional) Income* (e.g., income from employment or rental income) and *Special Expenses* (e.g., social security contributions) can be deducted, we must account for these tax base effects when calculating the actual income tax rate. To do that, we incorporate *Additional Income* and *Special Expenses* when determining the actual ATR and MTR.[24]

$$Taxable\ Income_i = Profit_i + Additional\ Income_i - Special\ Expenses_i. \tag{3}$$

Here, $Profit_i$ is the *provided profit* of firm i in the survey. For partnerships, we divide the partnership's profit using the number of partners, due to lack of information on a partnership's profit distribution agreement.[25] We could not ask for *Additional Income* and *Special Expenses* within the survey, due to the sensitive nature of this information. Also, the respondent could be an employed manager who is unfamiliar with this private information of firm owners. Even firm owners might have difficulties reporting their tax-related *Additional Income* and *Special Expenses* accurately.[26] To account for these issues, we use the Factually Anonymized Data from Income Tax Statistics (FAST 2017) offered by the German Federal Statistical Office[27]

[22] The income tax follows a progressive tax rate schedule, with marginal tax rates from 0% to 45%, according to Section 32a German Income Tax Code.

[23] The solidarity surcharge is added on the income tax and amounts to 5.5% of the income tax (Section 4 Solidarity Surcharge Code).

[24] Even though we provide a lot of guidance to the firms to ensure they focus only on business income, we have no guarantee that they do not incorporate *Additional Income* and *Special Expenses* when reporting their tax rate. To show the robustness of our results, we conduct a robustness check by running our analysis based on profits only; see Appendix S3.2 (see Appendix S3.2 in the Supporting Information).

[25] This decision might in some cases not exactly reflect the rule fixed in the partnership agreement. However, we accept this simplification because it allows us to control for this case and corresponds to what we consider to be a reasonable estimate.

[26] This is all the more true as entrepreneurs have the option of taking private health and old-age insurance and thus opting out of statutory social security insurance. To avoid potential confusion, we explicitly mentioned in the survey that we are only interested in the tax burden on their firm's profit (personal income tax and trade tax).

[27] Source: RDC of the Federal Statistical Office and Statistical Offices of the Federal States, doi: 10.21242/73111.2017.00.00.3.1.0, own calculations.

to impute *Additional Income* and *Special Expenses* into our survey data. FAST 2017 is a 10% stratified sample of the Official Income Tax Statistics of 2017. It contains extensive tax information on German taxpayers (e.g., sources of income, *Special Expenses*, and tax liability). However, data protection regulations prevent us from matching single taxpayers to the corresponding firm owners of our sample firms. Therefore, we match each of our firms with a predefined number (10) of FAST 2017 observations that are as similar as possible based on the following characteristics: profit, industry, and legal form. We impute the median value of *Additional Income* and *Special Expenses* of the respective FAST 2017 observations into our data. Figure 2 illustrates how we derive the *Taxable Income* based on a *Profit* for a sole proprietorship or partnership.

< Insert Figure 2 about here >

To match our survey and the FAST 2017 observations we use propensity-score matching.[28] Our propensity scores (Rosenbaum & Rubin, 1983) are based on the following simple logistic regression equation:

$$Survey_i = \alpha_i + \beta_i X_i + \epsilon_i, \tag{4}$$

where $Survey_i$ is one if it is a survey observation and zero otherwise, and X_i is the set of our matching variables. X_i includes $Profit_i$, $Industry_i$, and $Legal\ Form_i$. $Profit_i$ is the natural logarithm of a firm's profit.[29] $Industry_i$ describes the industry the firm operates in. $Legal\ Form_i$ describes whether a firm is a sole proprietorship or a partnership. To determine tax rates, it is also relevant whether a firm owner files his or her tax return alone or jointly with a spouse (income tax splitting). Since we refrained from asking for the marital status of firm owners, due to the data protection regulation, we match our survey observations in two ways: with FAST 2017 for single taxpayers and with FAST 2017 for couples who filed for joint taxation. We use nearest neighbor matching within a 0.1 caliper radius without replacement.[30] Since we rely on a one-to-10 propensity score matching, we use the 10 closest comparable taxpayers within the FAST 2017 data based on the propensity score. For the matching, *Industry*, *Legal Form* and *Marital Status* need to be identical between the survey and the matched observation. Successful propensity score matching assumes that the remaining variables have no influence on the dependent variable (Stuart, 2010; Shipman et al., 2017; Bilicka, 2019). Although we cannot empirically test this assumption, due to (survey) data limitations, we follow

[28] See Appendix A4 for results of the matching.

[29] Since FAST 2017 includes nominal 2017 values but the *provided profit* in the survey is based on 2018 values, we deflate the *provided profit* using inflation data from World Bank API for Germany to obtain comparable values.

[30] See Cochran and Rubin (1973) and Rosenbaum and Rubin (1985) for the determination of the optimal caliper. We define the caliper with 0.1 as small as possible to get a precise matching but large enough that we can get the 10 matches in the vast majority of cases. Nevertheless, we run robustness checks with a caliper of 0.2 on a 1:10 matching and a caliper of 0.1 on a 1:20 matching. The results are robust; there are no significant differences in the amount of *Additional Income* and *Special Expenses* for the respective groups ($p < 0.1$). Further, we see only marginal differences in the amount of misperception, see Appendix S1.

Shipman et al. (2017) and carefully select the most influential variables on tax rates of sole proprietorships and partners based on theoretical considerations. We account for those characteristics (*Profit*, *Industry*, *Legal Form*, and *Marital Status*) that affect the level of the *actual tax rate* of a non-corporation.[31]

Table 3 provides an overview of the mean effect of our imputation on the *Taxable Income* using propensity-score matching (one-to-10 nearest neighbor matching within a 0.1 caliper radius without replacement). The difference between *Taxable Income* (3) and a firm's *Profit* (1) depends on the marital status and the legal form. For our following analyses, we use the *Taxable Income* to determine the *actual tax rate*.[32] and *Special Expenses*. Since such profits already exceed the threshold at which tax progression has a noticeable effect on ATRs (and no effect on MTR), this approach does not bias our results.

< Insert Table 3 about here >

We employ the German Income Tax Schedule on a firm's *Taxable Income* to determine the *actual tax rate*. In addition to the personal income tax, profits of (commercial) sole proprietorships and partnerships are subject to trade tax. We determine the actual trade tax rate by multiplying a firm's profit by the trade tax rate, which we calculate based on the trade tax multiplier stated by the respective firm.[33] We also consider that the trade tax is entirely or at least largely compensated by an income tax credit.

The following equations sum up the determination of the actual ATR and MTR[34]:

$$\begin{aligned} Actual\ ATR_i = Personal\ Income\ Tax\ (Taxable\ Income_i) + Trade\ Tax_i\ (Profit_i) \\ -Income\ Tax\ Credit\ (TradeTax_i). \end{aligned} \tag{5}$$

$$\begin{aligned} Actual\ MTR_i = Personal\ Income\ Tax\ (\Delta\ Profit_i) + Trade\ Tax_i\ (\Delta\ Profit_i) \\ -Income\ Tax\ Credit\ (\Delta\ TradeTax_i). \end{aligned} \tag{6}$$

Due to the comprehensive neutralization of the trade tax by the income tax credit, both ATRs and MTRs of sole proprietorships and partnerships are almost entirely determined by the progressive income tax

[31] In Germany, firms can use a tax loss carryback or -forward, which can influence the tax rate as well. Within our survey, we cannot define whether and to what extent respondents included carrybacks and -forwards in their perceived ATR. To rule out that we miss a potentially relevant factor, we compare perceived ATRs of firms that reported a loss for 2019 or 2020 with comparable firms that had profits in 2019 and 2020. The results show no significant difference in their perceived ATR, which is why we are confident neglecting losses does not affect our results.

[32] For high incomes exceeding €1,112,866, our matching process is inapplicable since FAST 2017 does not include such high income earners, due to data protection regulations. Nevertheless, we keep these observations in our sample but do not add *Additional Income*. In the Appendix S3.2, we show the robustness of our results for using profits or total income to compute the *actual tax rate*.

[33] In Germany, the local trade tax multiplier is set by each municipality separately, which is why we ask firms for this variable. If there is no entry or no plausible entry on the trade tax multiplier, we use 400%, which represents the weighted average of trade tax multipliers in Germany - as used by the OECD Tax Statistics (OECD, 2022).

[34] For the actual MTR, we use the profit and increase it by 10%. This way we ensure that there is just an increase in profit but no change in *Additional Income* and *Special Expenses*, which are unrelated to an increase in business income.

rate. We account for effects emerging from differences in the marital status (married versus single) of firm owners. We compare the deviation of the *perceived tax rate* from the *actual tax rate* for each marital status and then use the smaller deviation as our measure for tax misperception. We thus employ a conservative approach that provides a lower bound of the estimates of misperception. Also, with this approach we avoid identifying a misperception that is solely based on a false categorization of a firm owner as a single versus married person.

3.2.2 Corporations

We use the (flat) tax rates for corporate and shareholder taxation to determine the *actual tax rate* of corporations. Corporations are taxed according to the separate entity principle: Profits are subject to the corporate income tax (including the solidarity surcharge = 15.825%) and the trade tax (depending on the trade tax multiplier of a municipality, leading to a trade tax rate around 14%) at the firm level, irrespective whether profits are retained or distributed.

In case of retained profits, we determine the *actual tax rate* as follows:

$$Actual\ ATR/MTR_{\text{retained,i}} = Corporate\ Income\ Tax + Trade\ Tax_i \tag{7}$$

If profits are distributed to natural persons as shareholders, they are subject to the income tax of the shareholder, which is generally the final withholding tax (including the solidarity surcharge = 26.4%).[35]

In case of distributed profits, we obtain the *actual tax rate* as follows:

$$\begin{aligned} Actual\ ATR/MTR_{\text{distributed,i}} &= Corporate\ Income\ Tax + Trade\ Tax_i \\ &+[1 - (Corporate\ Income\ Tax + Trade\ Tax_i)] \times Witholding\ Tax \end{aligned} \tag{8}$$

As corporations' retained and distributed profits are subject to a flat tax rate, the actual MTR does not deviate from the corresponding ATR. Thus, in contrast to sole proprietorships and partnerships, the actual ATR and MTR are identical.

[35] In some cases, dividends are subject to the regular progressive income tax rate, but 40% of dividends are tax exempt to avoid excessive taxation of corporate profits. We do not account for this, because here the income tax rate is generally very close to the final withholding tax rate.

4 RESULTS

4.1 Extent of Tax Rate Misperception

To analyze whether and to what extent firms have tax rate misperception, we use two approaches. First, we quantify misperception metrically. We analyze overall misperception and also examine the overestimation and the underestimation of ATR and MTR separately. Second, we identify the share of misperceiving firms by using our metric measure of misperception. As we are interested in the share of misperceiving firms, we have to define when a *perceived tax rate* is accurate. We choose a conservative approach and accept deviations of the *perceived tax rates* within a broader corridor of plus or minus 10 percentage points from the actual ATR and MTR or a narrower corridor of plus or minus five percentage points as accurate.[36]

In Table 4, we show mean values of perceived and actual ATRs and MTRs. The firm-specific benchmark tax rates are determined as described in Section 3.2.

< Insert Table 4 about here >

Our results reveal that, on average, sole proprietorships and partnerships significantly overestimate their ATR.[37] In contrast, they tend to underestimate their MTR. Misperception is more pronounced for ATRs than MTRs, as indicated by the shares of misperceivers. Corporations, on average, only slightly overestimate their ATR on retained profits. Misperception increases considerably and turns into underestimation if corporations are asked about their ATR when profits are fully distributed. Likewise, they overestimate their MTR at the firm level and underestimate it when including shareholder taxation. Thus sole proprietorships and partnerships show misperception similar to those of corporations for distributed profits. However, misperception is more pronounced for distributing corporations. To identify potential patterns of misperception induced by the legal form, in the subsequent sections, we examine misperception of non-corporations and corporations separately.

[36] Blaufus et al. (2015) also apply a corridor of plus or minus five percentage points to classify *perceived tax rates* as accurate. In Figure 11 in Appendix S2.1, we show the effect of the range of the corridor on the share of misperceiving firms.

[37] Even though we see outliers in our data, we refrain from removing them from the sample. The reason for this is that we cannot say with certainty whether an answer is reliable. Nevertheless, to address the issue of potentially dubious responses, we show robust results after excluding very fast responses that might have not taken the survey seriously in Appendix S3.1.

4.1.1 Sole Proprietorships and Partnerships

We display perceived ATRs of sole proprietorships and partnerships in Figure 3. The two dot-dashed lines show the actual ATRs determined on profits for married (lower line) and single (upper line) firm owners to illustrate the ATR trend.

< Insert Figure 3 about here >

Although perceived ATRs somewhat reflect the progressive slope of the German income tax schedule, we find many overestimates, especially in the direct progressive zone of the tax schedule (taxable income below around €57,000). Assuming a corridor of plus or minus five (10) percentage points of accepted deviation from the actual ATR, 71.5% (58.5%) of sole proprietorships misperceive their ATR, with 95.3% (97.5%) of them overestimating it. In case of partnerships, 76.2% (61%) misperceive their ATR, with 87.5% (87.5%) of them overestimating it.

< Insert Figure 4 about here >

Perceived MTRs of sole proprietorships and partnerships are displayed in Figure 4. We find that sole proprietorships and partnerships seem to misperceive their MTRs less than their ATRs. For a corridor of accepted deviation of plus or minus five (10) percentage points from the actual MTR, 58.9% (41.5%) of sole proprietorships and 52.4% (34.3%) of partnerships misperceive their MTR. Underestimation prevails for sole proprietorships (62.9% (67%)) as well as for partnerships (54.5% (63.9%)).

Our results document overall an economically significant tax rate misperception among sole proprietorships and partnerships. To understand this misperception further, we compare perceived ATRs and MTRs. This comparison allows us to draw conclusions on whether our respondents understand the concepts of ATR and MTR. In a direct progressive tax system, such as Germany's, except for the range of the personal allowance, MTRs always exceed the corresponding ATRs. Thus, for sole proprietorships and partnerships, we expect firms to consistently report an MTR larger than its ATR. In Figure 5, we plot average perceived ATRs and MTRs of sole proprietorships and partnerships on *provided profits*.

< Insert Figure 5 about here >

This figure reveals an interesting pattern: In many cases, firms' perceived MTRs fall below the corresponding ATR. Further, we find that 53.5% of sole proprietorships and partnerships that misperceive their ATR also misperceive their MTR.[38] Examining sole proprietors' and partnerships' average perceived ATRs and MTRs across the income range reveals a trend different from our expectations: On average,

[38] Based on a deviation of plus or minus five percentage points from the actual ATR/MTR.

perceived MTRs are barely distinguishable from perceived ATRs.[39] The stated relation suggests that firms might have problems in understanding and applying a progressive income tax schedule. We also find that only 49.1% of firms state correctly that MTRs exceed the corresponding ATRs. About 20.8% even report ATRs larger than MTRs. These firms seem to have difficulties in understanding the concept of MTR. More than half of them provide single digit MTRs, although they report double digit ATRs.[40] One-third of sole proprietorships and partnerships use the same tax rate for ATR and MTR. This finding aligns with the results of Rees-Jones and Taubinsky (2020), who show that individuals tend to linearize the tax schedule based on their ATR (*ironing heuristic*). However, we are skeptical of whether these firms really base their perceived MTR on their ATR for two reasons. First, these firms are much better at estimating their MTR than their ATR.[41] Second, more than 17% of these firms report an ATR of 42% respectively 45%, which are the two MTRs codified in the German Income Tax Code and often mentioned in political debates.[42] Hence, we argue that this fraction of sole proprietorships and partnerships rather seem to anchor their ATRs on the more salient MTRs.

4.1.2 Corporations

In Figure 6, we show perceived ATRs for (1) retained profits of the corporation and (2) distributed profits, including taxation at the shareholder level. The dot-dashed line indicates the nominal tax rate, considering corporate, the solidarity surcharge, and the trade tax, of 29.825% as a reference line for the *actual tax rate* on retained profits.[43] In case of distributed profits, the reference line also includes dividend taxation, with a final withholding tax of 26.4% (25% + 5.5% of solidarity surcharge).

We find that, for retained profits, many firms report a tax rate close to the reference line. Nevertheless, there is considerable variation, especially within the lower profit area. When allowing for a deviation of plus or minus five (10) percentage points from the actual ATR, 45.8% (22.9%) of corporations misperceive their ATR on retained profits, with 64.8% (63%) of them overestimating it. These values are surprisingly high, given the flat and easy-to-determine tax rate on retained profits. The share of misperception substantially increases for distributed profits, as Figure 6 depicts. 66.1% (44.9%) of corporations misperceive their ATR on distributed profits, given a corridor of accepted deviation of plus or minus five percentage points (10 percentage points) from the actual ATR, with only 30.8% (28.3%) of them still overestimating the tax burden.

[39] Paired t-test with $p > 0.10$.

[40] These firms may not have understood the question about the MTR. We perform additional analyses for subsamples excluding these firms; see Appendix S3.1.

[41] The average ATR misperception is 12.9%, and the average MTR misperception is -1.6%.

[42] In this regard, de Bartolome (1995) demonstrates that tax rates that are more salient in a tax table presented to respondents are used more often in economic decisions.

[43] Despite the flat tax rate, the *actual tax rate* can vary between corporations due to different local trade tax multipliers. To simplify the figure, we use the mean value of 400%, which results in a tax rate of 29.8% (= 15% * (1 + 5.5%) + 400% * 3.5%).

< Insert Figure 6 about here >

Comparing the perceived ATRs on retained and distributed profits allows us to deduce the misperception of dividend taxes. In contrast to retained profits, taxation of dividends is on average significantly misperceived. This is surprising, as dividends are regularly taxed at a flat tax rate of 26.4%, whereas our corporations, based on their mean perceived ATR and MTR, indicate an average dividend tax rate of 16.6%. Evidently, corporations are relatively accurate at reporting their ATR at the corporate level but have considerably less understanding of the ATR on distributed profits.

We provide perceived MTRs of corporations for retained and distributed profits in Figure 7. Reference lines show the actual MTR[44] in case of full profit retention and distribution. For a misperception defined as a deviation of more than plus or minus five (10) percentage points from the actual MTR, 49.2% (31.4%) of corporations misperceive their MTR on retained profits, with 67.2% (62.2%) overestimating it. For distributed profits, 65.3% (50.8%) of the corporations misperceive their MTR if misperception is defined as a deviation of more than plus or minus five (10) percentage points from the actual MTR. The share of overestimating firms amounts here only to 31.2% (31.7%). Given the tolerance range of plus or minus five percentage points, 94.4% (96.2%) of ATR misperceiving corporations also inaccurately report their MTR for retained (distributed) profits.

< Insert Figure 7 about here >

In comparison to the perceived ATR, corporations are less accurate in perceiving their MTR. For retained profits, misperception is clearly higher for MTRs than for ATRs. This result is interesting, as investments often employ retained profits and MTRs should be considered in investment decisions.

< Insert Figure 8 about here >

Our results document that corporations, on average and in line with our expectations, report very similar ATRs and MTRs. An illustration of the relation of ATR and MTR for corporations is provided in Figure 8. Nevertheless, we still find that 27.1% (39.8%) report MTRs different from their ATRs in the case of retained (distributed) profits. Although distributing profits does not change the proportionality of the tax schedule, more corporations report ATRs that differ from MTRs for distributed profits.

[44] We use the mean trade tax multiplier of 400% to determine the reference line.

4.2 Drivers of Tax Rate Misperception

Our findings demonstrate that firms significantly misperceive their ATRs and MTRs. To analyze what drives these misperceptions, we include independent variables in our model that are based on research on individuals' tax misperception (see Blaufus et al. (2022)) as well as special characteristics of our firms. We analyze the potential drivers using our survey data and conducting a regression analysis of the following simplified form:

$$Misperception_i = \alpha + \beta_i Drivers_i + \epsilon_i. \tag{9}$$

We define misperception as the absolute value (in percentage points) of either ATR misperception or MTR misperception. In a first step, we are interested in what drives the magnitude of misperception, regardless of whether tax rates are overestimated or underestimated. Abstracting from overestimates and underestimates facilitates the interpretation of coefficients.[45] In a second step, we also investigate the heterogeneity in overestimations and underestimations separately.

Like Hanlon et al. (2022, p. 1150), who emphasize that accounting matters are shaped not only by economic incentives and accessible information but also by individual preferences, abilities, experiences, and other characteristics, we group the drivers into the following two categories:

Firm Characteristics. We analyze three firm characteristics. (1) *Employees:* The number of employees allows us to proxy a firm's size. As shown by Graham et al. (2017), larger firms often employ qualified tax personnel, due to facing more tax-related duties and responsibilities (e.g., fulfilling compliance requirements or exploiting tax planning opportunities). Following this argument, tax rate misperception should decrease with firm size. In addition, the tax schedule for non-corporations involves size-related calculation difficulties: Firms with lower profits are subject to the direct progressive part of the income tax schedule, inhibiting determination of their MTR as compared to firms with higher profits, which are subject to the proportional marginal tax rate of 42% or 45%. *Employees* is the natural logarithm of the number of employees. (2) *Loss:* Even though we cannot be certain whether and to what extent survey respondents include losses when estimating their ATR and MTR, we rule out this potentially relevant factor by comparing perceived ATRs of firms that reported a loss for 2019 or 2020 with firms that had profits in 2019 and 2020. The results show no significant difference in their perceived ATR, which is why we are confident that tax loss carryforwards do not directly affect our results. *Loss* is one if a *Loss* occurred in 2019 or 2020 and zero otherwise. (3) *Tax Assistance:* From the literature on individuals (Rupert and Fischer, 1995; Gideon, 2014; Ballard and Gupta,

[45] To prove that the results are not only due to the choice of method, we show robust results for the use of Tobit regressions in Appendix S3.3.

2018), we know that using the assistance of a tax adviser in tax preparation increases misperception since tax knowledge is outsourced. We assume a similar pattern for firms and predict a positive relation between firms using (external) *Tax Assistance* and tax rate misperception. *Tax Assistance* is one if a firm gets support from a tax adviser and zero otherwise.

Personal Characteristics. We analyze three personal characteristics of the respondent. (4) *Tax Literacy*: Following Genest-Grégoire et al. (2017, p. 4) we define *Tax Literacy* as "having the knowledge, skills and confidence to make responsible tax decisions." Based on their approach, we use *Subjective Tax Literacy*, which captures self-stated tax knowledge within the survey. It is one for stating tax knowledge and otherwise zero. We also use *Objective Tax Literacy*, which captures revealed knowledge about basic tax concepts. Following Stantcheva (2021), we build a combined variable for *Objective Tax Literacy*. The variable includes the two components Tax Schedule and Tax Rate Choice. Tax Schedule is, for non-corporations, one if ATR is less than MTR and otherwise zero. For corporations, Tax Schedule is one if MTR equals ATR and otherwise zero. Tax Rate Choice is identical for both legal forms and is one when using the MTR in business decisions and otherwise zero. Using this composite, *Objective Tax Literacy* can be zero, one, or two. To achieve a simple interpretation of the variable and capture different levels of *Objective Tax Literacy*, we consider it as a factor variable within the regression. Thus, the two levels are represented as binary variables. In the regression, we therefore compare *Objective Tax Literacy* Level 1 (= 1) and *Objective Tax Literacy* Level 2 (= 2) with no *Objective Tax Literacy* (= 0). In general, findings from the literature on tax literacy are mixed. Although they do not refer to the term *Tax Literacy*, they do (at least partially) refer to the concept of tax literacy. Graham et al. (2017) report a positive effect of managers' educations[46] on the appropriate consideration of taxes in business decisions, whereas Amberger et al. (2023) show that, on average, making biased tax decisions is not influenced by the professional experience in accounting, taxation, or finance.[47] Further, Slemrod (2006) finds no effect of knowledge of tax terms[48] on individuals' misperception of tax schedule progressivity. Thus, the effect of tax literacy on tax rate misperception is unclear but, at least theoretically, should be positive. (5) *Tax Satisfaction:* The utility function of a firm manager may also include satisfaction considerations, which might affect their tax rate reports. We construct the variable *Tax Satisfaction*, which increases when firms are more satisfied with the tax system in Germany. It is comprised of the following components: Perceived Tax Complexity, Trust in Government, Peers' Tax Burden, and Tax Compliance Costs. Perceived Tax Complexity is the perceived level of tax complexity (1 to 5). Trust in

[46] Given our approach, managers' educations would be part of *Subjective Tax Literacy*.
[47] Given our approach, managers' professional experience in accounting, taxation, or finance would be part of *Subjective Tax Literacy*.
[48] Given our approach, knowledge of tax terms would be part of *Objective Tax Literacy*.

Government is the level of trust in public spending (1 to 5).[49] Peer's Tax Burden is one if firms perceive their own tax burden to be higher than that of smaller and larger competitors and zero otherwise. And Tax Compliance Costs is the share of perceived tax compliance costs relative to total compliance costs (see Appendix A2 for more details). The variables are standardized (Z-scores (0/1)). *Tax Satisfaction* itself is standardized as well (Z-score). In line with results of Ballard and Gupta (2018), who examine individual misperception, we expect stronger misperception among firms less satisfied with the tax system. (6) *Female:* Building on the literature on individuals, there is mixed evidence here. Females tend to overestimate their ATR (Blaufus et al., 2015), and they underestimate tax schedule progressivity less than men (Slemrod, 2006). However, there is also evidence that gender does not influence individuals' tax misperception at all (Fujii and Hawley, 1988; Gideon, 2014; Ballard and Gupta, 2018). Hence, we cannot predict the effect of gender on firms' tax rate misperception. *Female* is one if a respondent's stated gender is female and zero otherwise.

We provide summary statistics of the variables in Table 5 for sole proprietorships and partnerships and in Table 6 for corporations.

< Insert Table 5 and Table 6 about here >

In Appendix A2, we show more details, variable definitions, and summary statistics. The correlation matrix of covariates and additional summary statistics for the overall sample and by size are provided in the Appendices S2.2, S2.3, and S2.4.

4.2.1 Sole Proprietorships and Partnerships

In a first step, we analyze overall ATR and MTR misperception without distinguishing between overestimation and underestimation, using absolute values to capture the magnitude of the misperception. The results are shown in Table 7.

< Insert Table 7 about here >

The findings indicate that various factors are significantly associated with misperception of ATR and MTR. *Employees* is significantly negatively associated with ATR misperception ($p < 0.01$), which might be explained by a better tax-qualified workforce in larger companies being able to handle the inherent complexity of the progressive income tax schedule better. A one standard deviation increase in *Employees* corresponds to reduction of ATR misperception by about 17% of the mean ATR misperception.[50] However, this association

[49] Trust in the government also has a positive effect in other settings (see Eberhartinger et al. (2022), for a positive effect on tax bargaining; Kuehnhanss and Heyndels (2018)and Stantcheva (2021), for a positive effect on the attitudes toward redistributive policies, and Slemrod (2006) for the assessment of the U.S. tax system as fair).

[50] To determine the economic effect of a dependent binary, factor, or standardized variable, we divide the respective coefficient by the mean ATR respectively MTR misperception. In case of a logged independent variable, we multiply the coefficient by the standard deviation of the logged variable and then divide by the mean ATR respectively MTR misperception.

only applies to ATR misperception but vanishes for MTR misperception. We argue that the overestimation of the ATR and the lack of clear separation between the ATR and the MTR in firms' perceptions blur the effect for the MTR, especially in the highly progressive part of the tax schedule for firms. Firms overestimate the ATR, while at the same time there is an anchoring effect between the ATR and the MTR. Therefore, firms of all sizes estimate their MTR, which is higher than the ATR for sole proprietorships and partnerships, relatively well. *Tax Assistance* is significantly positively associated with ATR misperception ($p < 0.05$); being assisted in tax matters leads to an increase in ATR misperception by 4.3 percentage points, which is about 32% of the sample mean of ATR misperception. This finding comports with the findings for individuals that outsourcing tax knowledge leads to more misperception (Rupert and Fischer, 1995; Gideon, 2014; Ballard and Gupta, 2018). Again (and following the same explanation as before), we find no such effect on MTR misperception. As expected, *Loss* is not significantly associated with ATR or MTR misperception.

With regard to personal characteristics, we find that *Subjective Tax Literacy* is significantly negatively associated with ATR misperception ($p < 0.05$). *Subjective Tax Literacy* is associated with a 2.7 percentage points reduction in ATR misperception. This reduction corresponds to about 20% of the mean ATR misperception. Further, *Objective Tax Literacy* is significantly negatively associated with MTR misperception on Level 1 and Level 2 ($p < 0.01$). *Objective Tax Literacy* decreases MTR misperception by up to 9.8 percentage points, corresponding to about 90% of the mean MTR misperception. The association with ATR misperception is less pronounced. Only *Objective Tax Literacy* (Level 2) is weakly significant for ATR misperception ($p < 0.1$). Overall, the results show an interesting pattern, indicating a negative association between *Subjective Tax Literacy* and ATR misperception on the one hand and between *Objective Tax Literacy* and MTR misperception on the other. By distinguishing the effect of *Subjective and Objective Tax Literacy*, we confirm the results of Graham et al. (2017), who find a negative association with accounting-related education among corporate tax managers. *Tax Satisfaction* is significantly negatively associated with ATR misperception ($p < 0.01$). An increase of one standard deviation in *Tax Satisfaction* is associated with a decrease in ATR misperception by 1.9 percentage points, corresponding to about 14% of the mean ATR misperception. This is consistent with the results of Ballard and Gupta (2018), who examine individuals' ATR misperception and find stronger misperception among respondents who believe they are taxed too heavily or assume taxes are spent ineffectively. However, there is no association between *Tax Satisfaction* and MTR misperception.

In a second step, we investigate overestimation and underestimation of ATR and MTR. Detailed regression results are shown in Table 13 of Appendix A3. Highlighting the most important results, we find that the overall significant negative association of *Employees* with ATR misperception is reflected in

less overestimation of ATR and MTR. Further, the underestimation of ATR increases with the number of *Employees*. The positive association between using *Tax Assistance* and having ATR misperception is reflected in significantly more overestimation and underestimation of ATR. *Objective Tax Literacy* on Level 1 shows a significantly negative association with MTR underestimation, as does *Objective Tax Literacy* on Level 2. Further, we find a significantly negative association between ATR overestimation and underestimation as well as MTR underestimation with *Objective Tax Literacy* on Level 2.

In sum, both firm and personal characteristics affect misperception. Our findings show that firm size, using a tax adviser, being satisfied with the tax system, and being tax literate are the most important factors. With regard to *Objective Tax Literacy*, it is important to understand that, beyond the mere effect of the large coefficient, less than 10% of respondents are fully tax literate (*Objective Tax Literacy (Level 2*). Thus, the significant reduction in tax rate misperception occurs in reality only in one out of 10 cases.

4.2.2 Corporations

In a first step, we again analyze overall ATR and MTR misperception using absolute values to capture the magnitude of misperception. The results are shown in Table 8.

< Insert Table 8 about here >

Employees shows a weakly significant negative association with both $\text{ATR}_{\text{retained}}$ and $\text{MTR}_{\text{retained}}$ misperception ($p < 0.1$). A one standard deviation increase in *Employees* corresponds to reduction of ATR misperception by about 19% (13%) of the mean $\text{ATR}_{\text{retained}}$ ($\text{MTR}_{\text{retained}}$). This supports the finding of larger firms being able to employ qualified tax personnel, which can attenuate misperception. However, if profits are distributed, this effect vanishes. This might be because estimating tax rates is more difficult due to the increased complexity of the tax system, more precisely the interplay of the taxes on the corporate and shareholder levels. Further, since shareholder taxation is in general not relevant for firms' decision-making, also managers in larger firms may not be familiar with it. In contrast to non-corporations, we find no significant effect of tax assistance. Having experienced a *Loss* is insignificantly associated with tax rate misperception, with the exception of a weakly significant increased $\text{ATR}_{\text{retained}}$ misperception ($p < 0.1$). *Tax Assistance* is not significantly associated with tax rate misperception. With regard to personal characteristics, we find that *Subjective Tax Literacy* has no significant association with ATR or MTR misperception. However, *Objective Tax Literacy* on Levels 1 and 2 is significantly negatively associated with ATR and MTR misperception on retained and distributed profits: *Objective Tax Literacy* is associated with a significant decrease in $\text{ATR}_{\text{retained}}$ ($\text{ATR}_{\text{distributed}}$) by up to 2.9 (8.1) percentage points, corresponding to about 47% (71%) of the mean $\text{ATR}_{\text{retained}}$ ($\text{ATR}_{\text{distributed}}$) misperception ($p < 0.1$ ($p < 0.01$)). Further, *Objective Tax Literacy* is

associated with a decrease in $\text{MTR}_{\text{retained}}$ ($\text{MTR}_{\text{distributed}}$) misperception by up to 10.4 (13.3) percentage points, corresponding to about 122% (105%) of the mean $\text{MTR}_{\text{retained}}$ ($\text{MTR}_{\text{distributed}}$) ($p < 0.01$ ($p < 0.01$)). The large effects underline the importance of being tax literate. As for non-corporations, differentiating between *Subjective Tax Literacy* and *Objective Tax Literacy* extends the findings of previous studies (e.g., Slemrod, 2006; Graham et al., 2017; Amberger et al., 2023). *Tax Satisfaction* is only significantly negative associated with MTR misperception for retained profits ($p < 0.05$). A one standard deviation increase in *Tax Satisfaction* decreases $\text{MTR}_{\text{retained}}$ misperception by 1.6 percentage points, corresponding to about 18% of the mean $\text{MTR}_{\text{distributed}}$ misperception. Again, this comports with our prediction based on the findings of Ballard and Gupta (2018).

In the second step, we analyze overestimation and underestimation of ATR and MTR. Results are shown in Table 14 of Appendix A3.[51] Highlighting the most important results, we find that *Employees* shows only a weakly significant negative association with $\text{ATR}_{\text{retained}}$ misperception. The strong negative association between *Objective Tax Literacy* on both levels and kinds of tax rate misperception is mirrored especially in tax rate underestimation. We find a strong negative association between ATR and MTR underestimation for retained and distributed profits. In case of overestimation, a significant association only exists between *Objective Tax Literacy* and $\text{MTR}_{\text{retained}}$. An overestimation of tax rates seems to be attenuated by satisfaction with the tax system: *Tax Satisfaction* is significantly negatively associated with $\text{MTR}_{\text{retained}}$, $\text{ATR}_{\text{distributed}}$, and $\text{MTR}_{\text{distributed}}$ misperception.

Again, our results show that firm and personal characteristics drive misperception. Our findings show that firm size, being tax literate, and the satisfaction with the tax system are the most important factors. As with non-corporations, it is also important to understand for corporations, beyond the mere effect of the large coefficient, that less than 15% of respondents have reached *Objective Tax Literacy* Level 2.

Overall, we find that tax rate misperception is driven by firm and personal characteristics in the case of non-corporations and corporations. For both legal forms, firm size, being objectively tax literate, and being satisfied with the tax system are associated significantly with the magnitude of tax rate misperception. Further, we find that the inherent complexity of the tax system contributes to firms' tax rate misperception. In the case of non-corporations, being assisted by a tax adviser is also important.

[51] In view of the small sample sizes in the various characteristics, the results must be interpreted with caution. However, they provide important initial findings that should be explored in greater depth as part of further research.

4.3 Consequences of Tax Rate Misperception

Our previous results clearly illustrate that firms struggle with accurately estimating their tax rates. In a next step, we analyze how their misperception might impact their behavior.

4.3.1 Tax Rate Choice

Like Graham et al. (2017), who demonstrate that even managers of large public and private corporations often do not use their firm's MTR in their decision-making,[52] in a first step, we investigate which tax rates our surveyed firms incorporate in their business decisions. We ask our respondents about which tax rate they use in investment decisions. Respondents had the option to choose ATR, MTR, STR, self-defined tax rate (self-set), or another tax rate (other). We find the ATR as the most common tax rate incorporated in investment decisions and confirm the results for private firms of Graham et al. (2017) for our sample of German SMEs. About 40% of the firms use their ATR in decision-making; less than 20% use their MTR.[53] We display the survey results on the chosen tax rate in Figure 9.

< Insert Figure 9 about here >

However, it is unclear what role tax rate misperception plays in this context. Therefore, we perform regression analyses[54] of the following simplified form to identify associations between *Tax Rate Choice* in investment decisions and *Overall Tax Misperception*.[55]

$$Tax\ Rate\ Choice = \alpha + \beta_1 Overall\ Misperception + \beta_i Drivers_i + \epsilon_i \tag{10}$$

The dependent variable *Tax Rate Choice* comprises the specification *Choice ATR* (equals one for firms that choose the ATR and zero otherwise), *Choice MTR* (equals one for firms that choose the MTR and zero otherwise), and *Choice STR* (equals one for firms that choose the statutory tax rate and zero otherwise) in investment decisions. We use the independent variables of our driver analysis,[56] which also

[52] Depending on the type of business decision, only 8.8% to 12.5% of the surveyed managers use the MTR.

[53] Relatedly, Wittman (1989) illustrates that firms do not consider taxes appropriately in business decisions, and de Bartolome (1995) shows that individuals often use the ATR instead of the MTR as well. But using average instead of marginal figures appears not only in a tax setting. Shin (1985) finds that the average price predicts electricity demand better than the marginal price. Faulhaber and Baumol (1988) indicate, that at least until the 1970s, most firms use average rather than marginal costs in their pricing decisions.

[54] Despite the dependent variable being a binary variable, we use OLS regression instead of Logit regression for two reasons. First, the results are easier to interpret, and the analyses still perform very well (Angrist & Pischke, 2009). Second, we can deal with missing variation in some variables leading to exceptionally large standard deviations. Nevertheless, we also perform a Logit regression (untabulated) and find robust results.

[55] We find similar results for the association of tax rate misperception and tax rates employed in financing decisions (untabulated).

[56] For *Objective Tax Literacy*, we only consider Level 1 (knowledge of the relation between ATR and MTR) in the regression analysis, as Level 2 comprises the consideration of MTR in investment decisions themselves. As this corresponds to our dependent variable, we cannot include Level 2 as an independent variable.

show similarities with the independent variables used by Graham et al. (2017) in their analysis of tax rate choice, to examine the associations with firms' *Tax Rate Choice* for our sample of SMEs. Further, we account for tax rate misperception via *Overall Tax Misperception*. We calculate *Overall Tax Misperception* by adding the individual ATR and MTR misperception of each company and dividing the sum by two (see Appendix A2 for details).[57] Our results are displayed in Table 9.

< Insert Table 9 about here >

We focus on the impact of *Overall Tax Misperception* on *Tax Rate Choice* in investment decisions. Our results indicate that, for sole proprietorships and partnerships as well as for corporations, there is no significant association between misperception and choosing the ATR. However, an increase in *Overall Tax Misperception* is associated with sole proprietorships and partnerships being less likely to choose the (appropriate) MTR. This may be explained by the fact that less misperception indicates a better understanding of the complex individual income tax and thus the concept and use of the MTR.[58] For corporations, subject to the simple flat tax at the corporate level, we find no such association between tax rate misperception and the consideration of tax rates in business decisions. Further, for sole proprietorships and partnerships, an increase in *Overall Tax Misperception* is additionally linked to firms being more likely to use the statutory tax rate.

4.3.2 Desired Tax Cut

To examine further consequences of tax rate misperception, we asked firms which tax burden they consider fair for their company and compare this to their perceived ATR. Figure 10 displays the tax rates used in investment decisions of the surveyed firms by legal form.

< Insert Figure 10 about here >

Further, we conduct regression analyses using the simplified form below.

$$Desired\ Tax\ Cut = \alpha + \beta_1 Overestimation + \beta_2 Underestimation + \beta Drivers_i + \epsilon_i \tag{11}$$

Desired Tax Cut is the dependent variable. *Desired Tax Cut* describes the difference between *Perceived ATR* and *Fair ATR*, when *Perceived ATR* exceeds *Fair ATR*. This way we capture all firms that feel overly burdened by the tax system.[59] Again, our independent variables are based on our drivers analysis.

[57] Since shareholder taxation is in general not relevant for firms' decision-making, we consider misperception at the level of retained profits in the following analyses.

[58] *Objective Tax Literacy Level 1*, which reflects the knowledge of the relation of ATR and MTR, is significantly positively associated with choosing the (appropriate) MTR for either legal form. This also indicates a better understanding of the concept and use of MTR.

[59] In our sample, more than 90% of the firms state a desire for a tax cut (N = 414).

Additionally, we include *Misperception Overestimation* and *Misperception Underestimation*[60] to account for the effect of ATR overestimation and underestimation on the *Desired Tax Cut*. *Misperception Overestimation* (*Misperception Underestimation*) is one if firms overestimate (underestimate) their ATR by more than 5 percentage points and zero otherwise. Our results are displayed in Table 10.

< Insert Table 10 about here >

We once again solely focus on the impact of misperception of tax rates, depicted by *Misperception Overestimation* and *Misperception Underestimation*. *Misperception Overestimation* shows a significant positive effect on *Desired Tax Cut* for both legal forms and independent of retained or distributed profits. For *Misperception Underestimation*, we find the opposite effect, with an exception for retained profits in the case of corporations, where the coefficient is also negative but insignificant. Based on these results, we conclude that tax rate misperception has important policy implications, as the demand for tax cuts may partly be driven by this misperception.

Overall, our results should be seen as a first step in investigating the impact of tax misperception on corporate decision-making. They underscore the relevance of incorporating tax rate misperception into real effects studies; e.g., in studies on the effects of anti-tax avoidance regulations and tax incentives on compliance and investment behavior, since firms base their decisions on perceived rather than actual tax rates. Further, our results suggest that reducing tax rate misperception is crucial for effective tax reforms. Our analyses suggest that a lack of understanding of tax burdens may not only undermine the effectiveness of targeted tax reforms but also might bias voting. Further research on the consequences of tax rate misperception by firms therefore appears to be necessary.

[60] In the case of corporations, overestimation and underestimation are split between retained and distributed profits, depending on the dependent variable.

5 CONCLUSION

This study explores SMEs' tax rate misperception as well as its drivers and consequences. Our approach involves firms estimating their ATR and MTR based on a provided profit, and we calculate actual ATRs and MTRs to benchmark perceived tax rates using administrative data. This approach yields robust estimations of firms' tax rate misperception.

Our findings indicate that many firms misperceive their tax rates, with over 66% misperceiving their ATR and 55% misperceiving their MTR. Non-corporations show a clear pattern: ATRs are overestimated, while MTRs are underestimated. Overall, more than 71% (76%) of sole proprietorships (partnerships) misperceive their ATR and over 58% (52%) misperceive their MTR. Corporations exhibit less misperception when reporting their tax rates for retained profits, which may be attributed to the flat tax rate structure, versus the progressive income tax schedule for non-corporations. Nevertheless, over 45% of corporations misperceive their ATR and MTR by more than plus or minus five percentage points in the case of retained profits. This share increases to about two-thirds (65%) when distributed profits are considered. On average, corporations considerably underestimate the ATR and MTR on distributed profits. In the case of retained profits, both are slightly overestimated.

In a second step, we identify drivers of misperception: firm size, tax literacy, and satisfaction with the tax system. Further, we find that the inherent complexity of the tax system affects the magnitude of firms' tax rate misperception. Highlighting the significance of further analysis of tax rate misperception, we present initial findings on consequences. From an entrepreneurial perspective, we demonstrate that tax rate misperception can lead to distorted business decisions, especially under a progressive tax schedule. Specifically, misperception is positively associated with reduced use of MTR in investment decisions, resulting in non-optimal investments. Understanding the drivers and emergence of tax rate misperception is also relevant from a policy perspective, as our results indicate that the sense of overpaying taxes strongly relates to an overestimation of the tax rate. This misperception could lead to an overly pronounced desire for tax cuts.

Our findings contribute to closing the research gap on firms' tax misperception and respond to Blaufus et al.'s (2022) call for further research. Quantifying tax rate misperception for firms of different sizes and legal forms can help improve predictions of firms' responses to tax reforms. Although our study provides novel insights into tax misperception of firms and evidence of its consequences, further research is needed.

REFERENCES

Allee, K. D., & Yohn, T. L. (2009). The demand for financial statements in an unregulated environment: An examination of the production and use of financial statements by privately held small businesses. *The Accounting Review*, *84*(1), 1–25. https://doi.org/10.2308/accr.2009.84.1.1

Amberger, H. J., Eberhartinger, E., & Kasper, M. (2023). Tax-rate biases in tax decisions: Experimental evidence. *Journal of the American Taxation Association*, *45*(1), 7–34. https://doi.org/10.2308/JATA-2020-019

Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton University Press. https://doi.org/10.2307/j.ctvcm4j72

Armstrong, C. S., Blouin, J. L., & Larcker, D. F. (2012). The incentives for tax planning. *Journal of Accounting and Economics*, *53*(1-2), 391–411. https://doi.org/10.1016/j.jacceco.2011.04.001

Auld, D. A. L. (1979). Public sector awareness and preferences in Ontario. *Canadian Tax Journal*, *27*(2), 172–183.

Ballard, C. L., & Gupta, S. (2018). Perceptions and realities of average tax rates in the federal income tax. *National Tax Journal*, *71*(2), 263–294. https://doi.org/10.17310/ntj.2018.2.03

Bilicka, K. A. (2019). Comparing UK tax returns of foreign multinationals to matched domestic firms. *American Economic Review*, *109*(8), 2921–2953. https://doi.org/10.1257/aer.20180496

Blaufus, K., Bob, J., Hundsdoerfer, J., Sielaff, C., Kiesewetter, D., & Weimann, J. (2015). Perception of income tax rates: Evidence from Germany. *European Journal of Law and Economics*, *40*(3), 457–478. https://doi.org/10.1007/s10657-013-9389-9

Blaufus, K., Chirvi, M., Huber, H.-P., Maiterth, R., & Sureth-Sloane, C. (2022). Tax misperception and its effects on decision making – Literature review and behavioral taxpayer response model. *European Accounting Review*, *31*(1), 111–144. https://doi.org/10.1080/09638180.2020.1852095

Brown, C. V. (1969). Misconceptions about income tax and incentives. *Scottish Journal of Political Economy*, *16*(2), 1–21. https://doi.org/10.1111/j.1467-9485.1969.tb00028.x

Brühne, A. I., & Schanz, D. (2022). Defining and managing corporate tax risk: Perceptions of tax risk experts. *Contemporary Accounting Research*, *39*(4), 2861–2902. https://doi.org/10.1111/1911-3846.12785

Cochran, W. G., & Rubin, D. B. (1973). Controlling bias in observational studies: A review. *Sankhyā: The Indian Journal of Statistics*, *35*(4), 417–446.

Coolidge, J., Ilic, D., & Kisunko, G. (2009). Small businesses in South Africa: Who outsources tax compliance work and why? *World Bank Policy Research Working Paper No. 4873*. https://ssrn.com/abstract=1368079

de Bartolome, C. A. M. (1995). Which tax rate do people use: Average or marginal? *Journal of Public Economics*, *56*(1), 79–96. https://doi.org/10.1016/0047-2727(93)01409-4

Dobbins, L., & Jacob, M. (2016). Do corporate tax cuts increase investments? *Accounting and Business Research*, *46*(7), 731–759. https://doi.org/10.1080/00014788.2016.1192985

Eberhartinger, E., Speitmann, R., Sureth-Sloane, C., & Wu, Y. (2022). How does trust affect concessionary behavior in tax bargaining? *FinanzArchiv / European Journal of Public Finance*, *78*(1-2), 112–155. https://doi.org/10.1628/fa-2022-0002

Endres, D., & Spengel, C. (Eds.). (2015). *International company taxation and tax planning*. Kluwer Law International.

Enrick, N. L. (1963). A pilot study of income tax consciousness. *National Tax Journal*, *16*(2), 169–173.

Erickson, M. M., Hanlon, M., Maydew, E. L., & Shevlin, T. (2020). *Scholes & Wolfson's taxes and business strategy* (6th ed.). Cambridge Business Publishers, LLC.

Faccio, M., & Xu, J. (2015). Taxes and capital structure. *Journal of Financial and Quantitative Analysis*, *50*(3), 277–300. https://doi.org/10.1017/S0022109015000174

Faulhaber, G. R., & Baumol, W. J. (1988). Economists as innovators: Practical products of theoretical research. *Journal of Economic Literature*, *26*(2), 577–600. https://www.jstor.org/stable/2726363

Fisman, R., Gladstone, K., Kuziemko, I., & Naidu, S. (2020). Do Americans want to tax wealth? Evidence from online surveys. *Journal of Public Economics*, *188*(6), 104207. https://doi.org/10.1016/j.jpubeco.2020.104207

Fujii, E. T., & Hawley, C. B. (1988). On the accuracy of tax perceptions. *The Review of Economics and Statistics*, *70*(2), 344–347. https://doi.org/10.2307/1928321

Gallemore, J., Hollander, S., Jacob, M., & Zheng, X. (2024). Tax policy beliefs and investment: Evidence from the 2016 U.S. election and the Tax Cuts and Jobs Act. *Working Paper, forthcoming Journal of Accounting Research*. https://doi.org/10.2139/ssrn.3775710

Genest-Grégoire, A., Godbout, L., & Guay, J.-H. (2017). The knowledge deficit about taxes: Who it affects and what to do about it. *C.D. Howe Institute Commentary 484*. https://doi.org/10.2139/ssrn.2998056

Gensemer, B. L., Lean, J. A., & Neenan, W. B. (1965). Awareness of marginal income tax rates among high-income taxpayers. *National Tax Journal*, *18*(3), 258–267.

German Federal Statistical Office. (2020). Statistisches Unternehmensregister. www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Unternehmensregister/Tabellen/unternehmen-beschaeftigte-umsatz-wz08.html

Gideon, M. (2014). Survey measurement of income tax rates. *Doctoral dissertation, The University of Michigan, University of Michigan Library*. https://pdfs.semanticscholar.org/3006/42d2b540d4dec5217edd295b14f7b7a02eee.pdf

Gideon, M. (2017). Do individuals perceive income tax rates correctly? *Public Finance Review*, *45*(1), 97–117. https://doi.org/10.1177/1091142115615670

Graham, J. R. (1996). Debt and the marginal tax rate. *Journal of Financial Economics*, *41*(1), 41–73.

Graham, J. R. (2003). Taxes and corporate finance: A review. *The Review of Financial Studies*, *16*(4), 1075–1129. https://doi.org/10.1093/rfs/hhg033

Graham, J. R., Hanlon, M., Shevlin, T., & Shroff, N. (2017). Tax rates and corporate decision-making. *The Review of Financial Studies*, *30*(9), 3128–3175. https://doi.org/10.1093/rfs/hhx037

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, *50*(2-3), 127–178. https://doi.org/10.1016/j.jacceco.2010.09.002

Hanlon, M., Yeung, K., & Zuo, L. (2022). Behavioral economics of accounting: A review of archival research on individual decision makers. *Contemporary Accounting Research*, *39*(2), 1150–1214. https://doi.org/10.1111/1911-3846.12739

Hoopes, J. L., Reck, D. H., & Slemrod, J. (2015). Taxpayer search for information: Implications for rational attention. *American Economic Journal: Economic Policy*, *7*(3), 177–208. https://doi.org/10.1257/pol.20140050

Hoppe, T., Schanz, D., Sturm, S., & Sureth-Sloane, C. (2023). The tax complexity index – a survey-based country measure of tax code and framework complexity. *European Accounting Review*, *32*(2), 239–273. https://doi.org/10.1080/09638180.2021.1951316

Hundsdoerfer, J., & Sichtmann, C. (2009). The importance of taxes in entrepreneurial decisions: An analysis of practicing physicians' behavior. *Review of Managerial Science*, *3*(1), 19–40. https://doi.org/10.1007/s11846-008-0023-0

International Labour Organization. (2019). The power of small: Unlocking the potentail of SMEs. https://www.ilo.org/infostories/en-GB/Stories/Employment/SMEs#engines

Jackson, S. B., & Hatfield, R. C. (2005). A note on the relation between frames, perceptions, and taxpayer behavior. *Contemporary Accounting Research*, *22*(1), 145–164. https://doi.org/10.1506/L5LA-L863-CF9K-WEJ5

Kamleitner, B., Korunka, C., & Kirchler, E. (2012). Tax compliance of small business owners. *International Journal of Entrepreneurial Behavior & Research*, *18*(3), 330–351. https://doi.org/10.1108/13552551211227710

Kuehnhanss, C. R., & Heyndels, B. (2018). All's fair in taxation: A framing experiment with local politicians. *Journal of Economic Psychology*, *65*, 26–40. https://doi.org/10.1016/j.joep.2018.01.004

Lisowsky, P., & Minnis, M. (2020). The silent majority: Private U.S. firms and financial reporting choices. *Journal of Accounting Research*, *58*(3), 547–588. https://doi.org/10.1111/1475-679X.12306

MacKie-Mason, J. K. (1989). Do taxes affect corporate financing decisions? *Office of Tax Policy Research Working Paper No. 90-11*. https://www.bus.umich.edu/otpr/papers/1990-11.PDF

McKerchar, M., Ingraham, L. R., & Karlinsky, S. (2005). Tax complexity and small business: A comparison of the perceptions of tax agents in the United States and Australia. *Journal of Australian Taxation*, *8*(2), 289–327. https://doi.org/https://search.informit.org/doi/10.3316/informit.101910387615251

Moore, D. T., & Slemrod, J. (2021). Optimal tax systems with endogenous behavioral biases. *Journal of Public Economics*, *197*(9), 104384. https://doi.org/10.1016/j.jpubeco.2021.104384

Neuman, S. S., Omer, T. C., & Schmidt, A. P. (2020). Assessing tax risk: Practitioner perspectives. *Contemporary Accounting Research*, *37*(3), 1788–1827. https://doi.org/10.1111/1911-3846.12556

OECD. (2022). Corporate income tax: Corporate income tax rates: OECD tax statistics (database). https://doi.org/10.1787/7cde787f-en

Rees-Jones, A., & Taubinsky, D. (2020). Measuring "schmeduling". *The Review of Economic Studies*, *87*(5), 2399–2438. https://doi.org/10.1093/restud/rdz045

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, *70*(1), 41–55.

Rosenbaum, P. R., & Rubin, D. B. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician*, *39*(1), 33–38.

Rupert, T. J., & Fischer, C. M. (1995). An empirical investigation of taxpayer awareness of marginal tax rates. *Journal of the American Taxation Association*, *17*(2), 36–59.

Schmölders, G. (1960). *Das Irrationale in der öffentlichen Finanzwirtschaft*. Rowohlt.

Shin, J.-S. (1985). Perception of price when price information is costly: Evidence from residential electricity demand. *The Review of Economics and Statistics*, *67*(4), 591–598. https://doi.org/10.2307/1924803

Shipman, J. E., Swanquist, Q. T., & Whited, R. L. (2017). Propensity score matching in accounting research. *The Accounting Review*, *92*(1), 213–244. https://doi.org/10.2308/accr-51449

Slemrod, J. (2006). The role of misconceptions in support for regressive tax reform. *National Tax Journal*, *59*(1), 57–75. https://doi.org/10.17310/ntj.2006.1.03

Stantcheva, S. (2021). Understanding tax policy: How do people reason? *Quarterly Journal of Economics*, *136*(4), 2309–2369. https://doi.org/10.1093/qje/qjab033

Stuart, E. A. (2010). Matching methods for causal inference: A review and a look forward. *Statistical Science*, *25*(1), 1–21. https://doi.org/10.1214/09-STS313

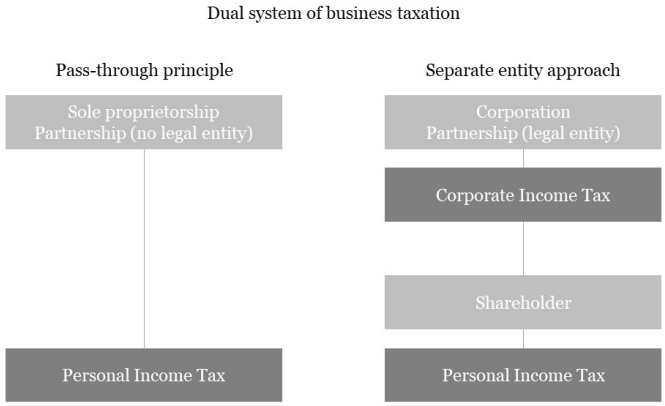
Van Wagstaff, J. (1965). Income tax consciousness under withholding. *Southern Economic Journal*, *32*(1), 73–80. https://doi.org/10.2307/1054985

Williamson, J. B. (1976). Beliefs about the rich, the poor and the taxes they pay. *American Journal of Economics and Sociology*, *35*(1), 9–30. https://doi.org/10.1111/j.1536-7150.1976.tb01208.x

Wittman, D. (1989). Pressure group size and the politics of income redistribution. *Social Choice and Welfare*, *6*(4), 275–286.

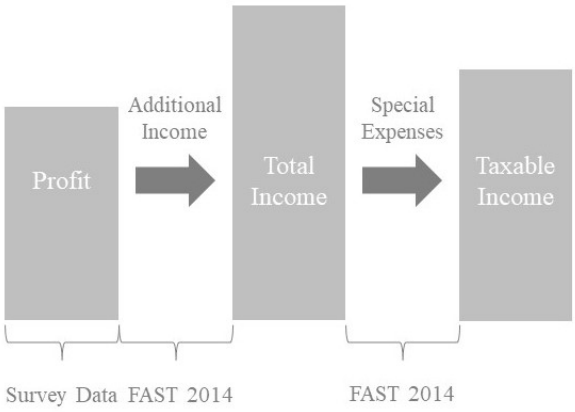
FIGURES AND TABLES

FIGURE 1 Dual system of Business Taxation.



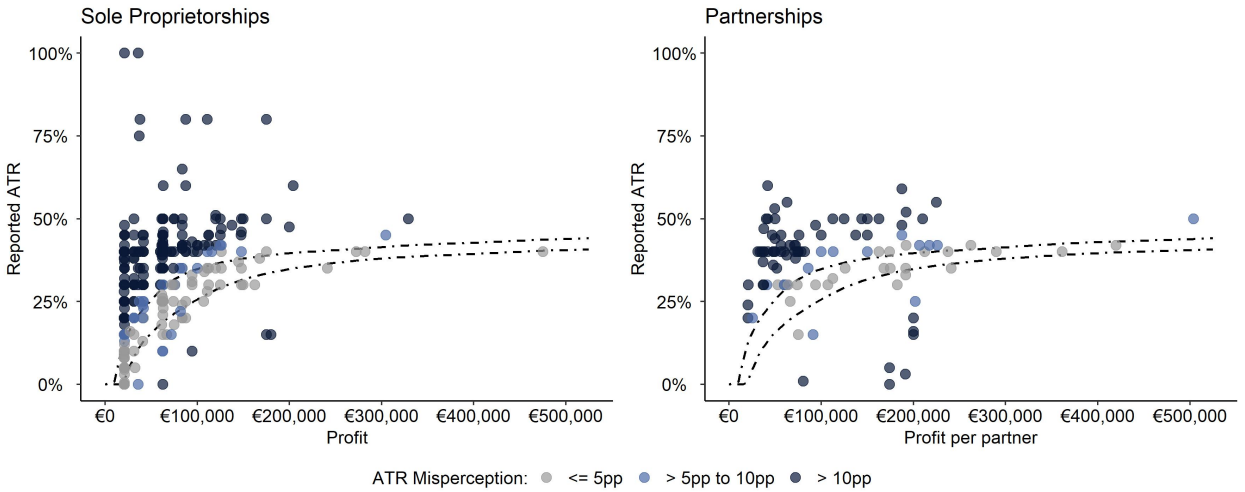
Notes: This figure illustrates the dual system of business taxation following Endres and Spengel (2015).

FIGURE 2 Approach to determine Taxable Income.



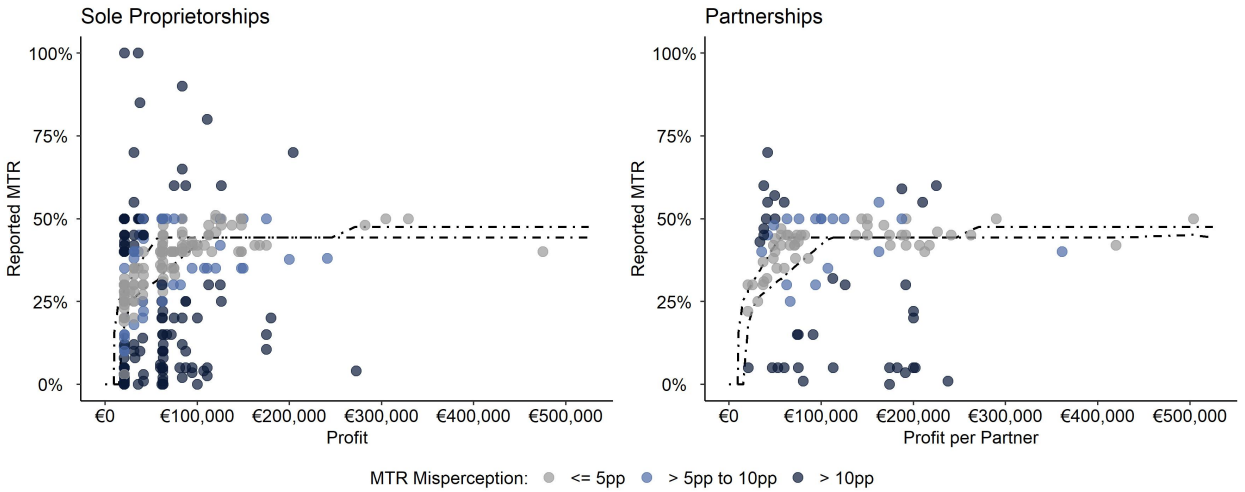
Notes: This figure illustrates the determination of the *Taxable Income* based on the *provided profit* from our survey, *Additional Income* (FAST 2017) and *Special Expenses* (FAST 2017). This stylized illustration only sketches the process of determining the *Taxable Income*, it is not supposed and does not reflect the actual size of *Additional Income* and *Special Expenses*. It is important to note that *Additional Income* can be negative.

FIGURE 3 Perceived ATRs of Sole Proprietorships and Partnerships.



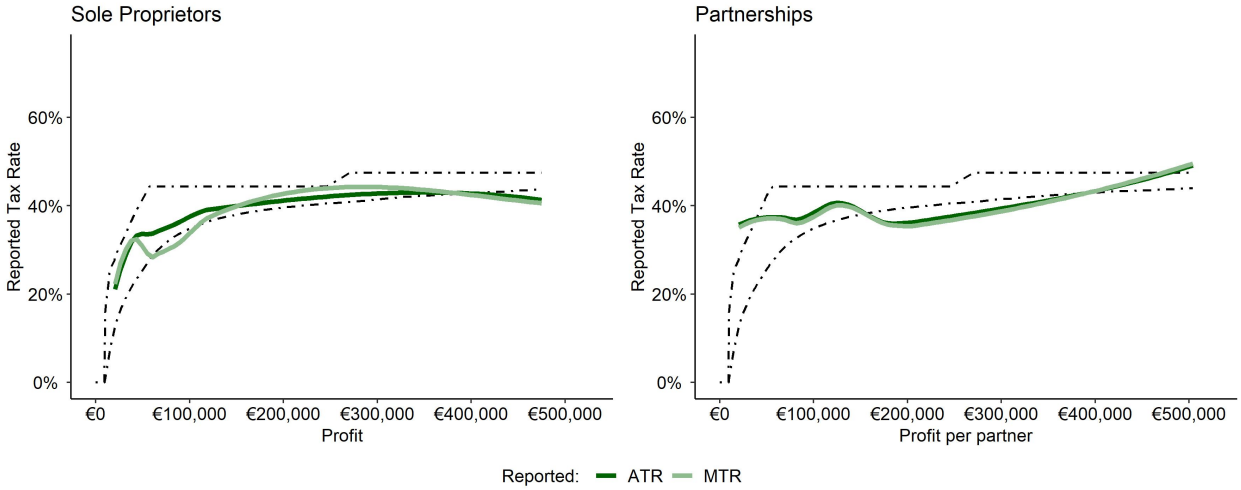
Notes: This figure shows perceived ATRs of sole proprietorships and partnerships. All points represent perceived ATRs, the dashed lines illustrate ATRs on profits of married (lower line) and single (upper line) taxpayers in Germany. The level of misperception is indicated by the color of each point, which ranges from gray to light blue to dark blue as the level of misperception increases. Misperception is identified based on ATRs of *Taxable Income*. For presentation reasons, the figure is limited to observations for profits below €500,000.

FIGURE 4 Perceived MTRs of Sole Proprietorships and Partnerships.



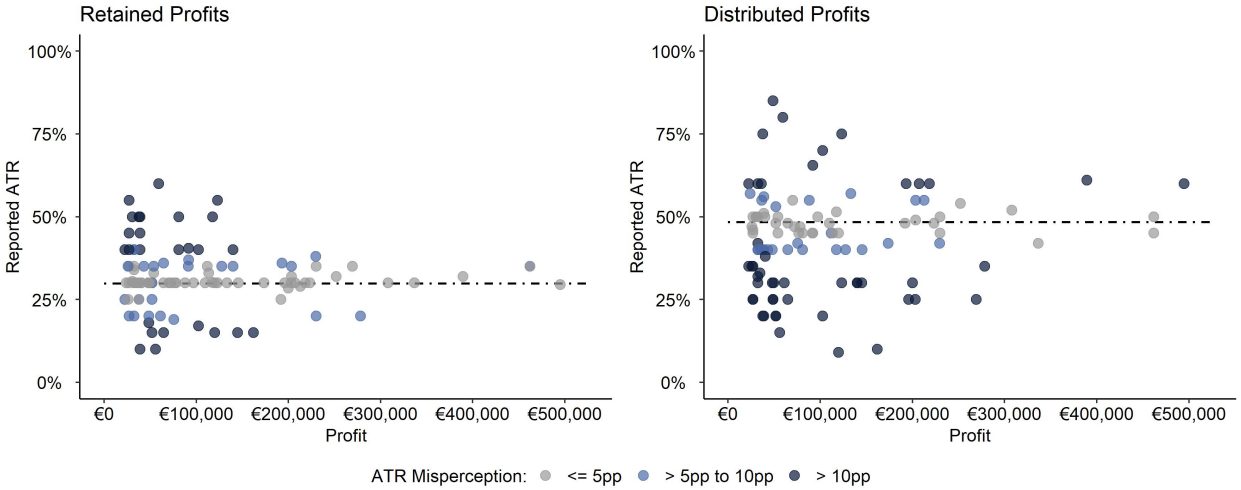
Notes: This figure shows perceived MTRs of sole proprietorships and partnerships. All points represent perceived ATRs, the dashed lines illustrate ATRs on profits of married (lower line) and single (upper line) taxpayers in Germany. The level of misperception is indicated by the color of each point, which ranges from gray to light blue to dark blue as the level of misperception increases. Misperception is identified based on ATRs of *Taxable Income*. For presentation reasons, the figure is limited to observations for profits below €500,000.

FIGURE 5 Perceived ATR-MTR Relation of Sole Proprietorships and Partnerships.



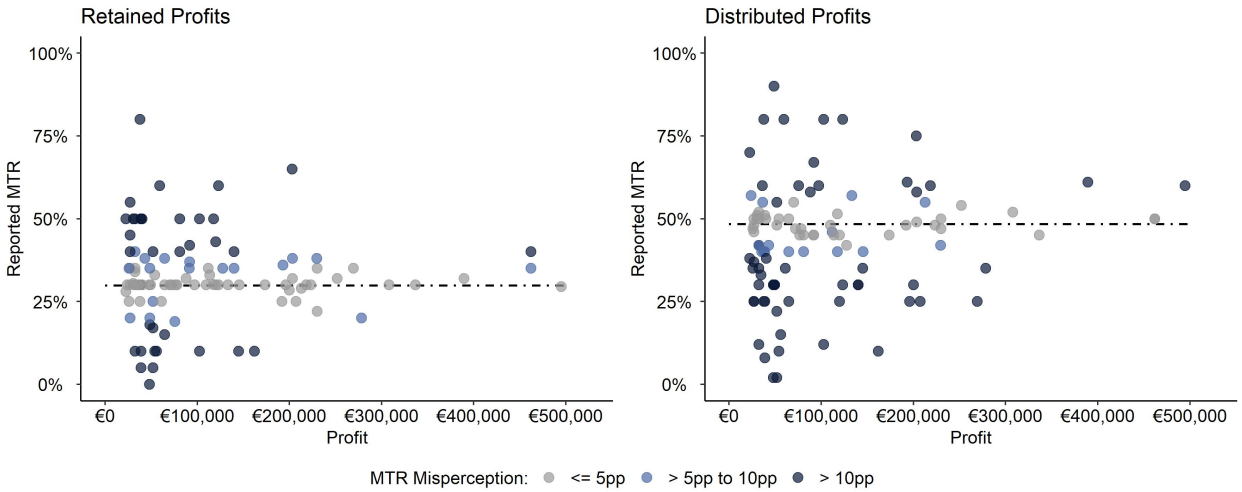
Notes: This figure shows mean perceived ATRs and MTRs for sole proprietorships and partnerships. The estimated mean (solid) lines are generated by locally estimated scatterplot smoothing. The dot-dashed lines are reference lines for the actual ATR (lower) and MTR (upper) for a single taxpayer. For presentation reasons, the figure does not include observations for profits above €500,000.

FIGURE 6 Perceived ATRs of Corporations.



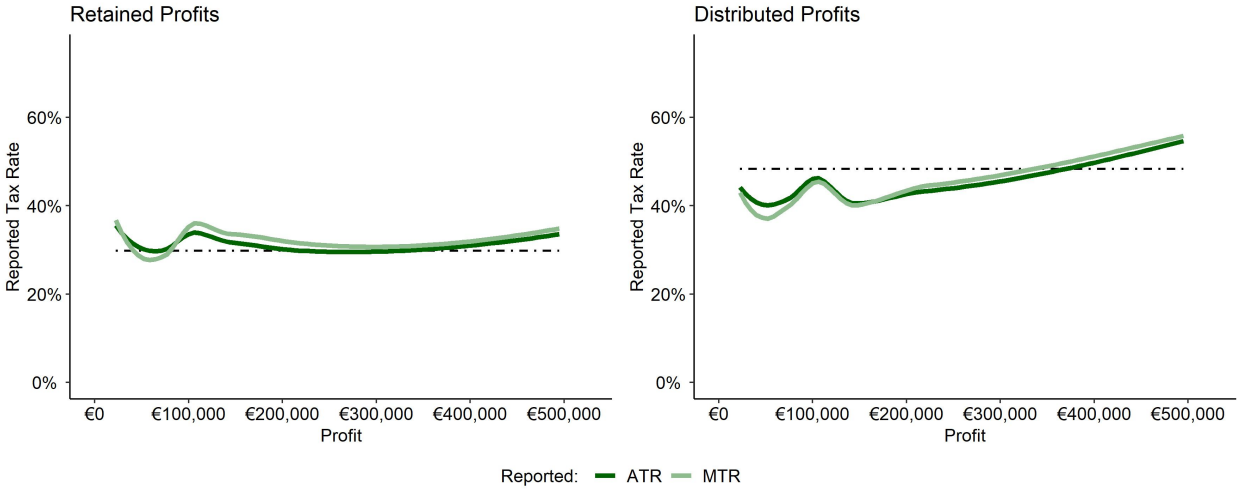
Notes: This figure shows ATR Misperception of corporations in case of retained and distributed profits. All points represent perceived ATRs, the dashed line indicates the respective corporate tax rate at a trade tax multiplier of 400%. The level of misperception is indicated by the color of each point. The level of misperception is indicated by the color of each point, which ranges from gray to light blue to dark blue as the level of misperception increases. For presentation reasons, the figure is limited to observations for profits below €500,000.

FIGURE 7 Perceived MTRs of Corporations.



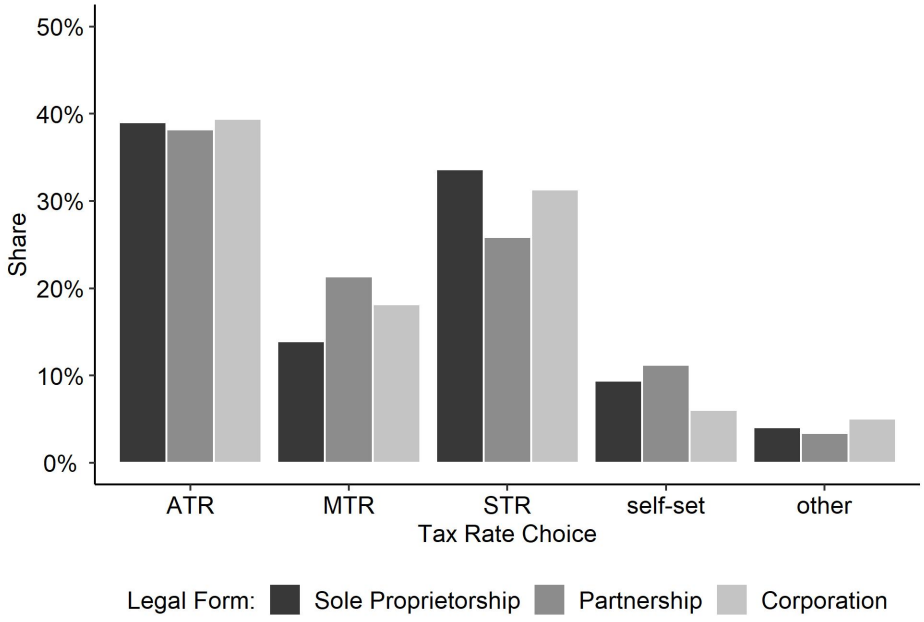
Notes: This figure shows ATR Misperception of corporations in case of retained and distributed profits. All points represent perceived ATRs, the dashed line indicates the respective corporate tax rate at a trade tax multiplier of 400%. The level of misperception is indicated by the color of each point. The level of misperception is indicated by the color of each point, which ranges from gray to light blue to dark blue as the level of misperception increases. For presentation reasons, the figure is limited to observations for profits below €500,000.

FIGURE 8 Perceived ATR-MTR Relation of Corporations.



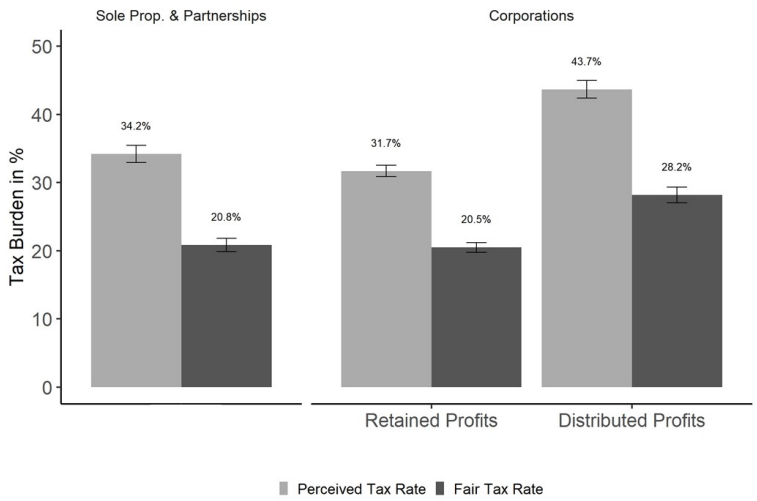
Notes: This figure shows mean perceived ATRs and MTRs for corporations in case of retained and distributed profits. The estimated mean (solid) lines are generated by locally estimated scatterplot smoothing. The dot-dashed line represents the average actual ATR and MTR. For presentation reasons, the figure does not include observations for profits above €500,000.

FIGURE 9 Tax Rate Choice by Legal Form.



Notes: This figure shows the average shares of chosen tax rates in investment decisions (N = 411).

FIGURE 10 Desired Tax Cut by Legal Form.



Notes: This figure shows the average perceived and fair tax rate (N = 448).

TABLE 1 Survey Sample Comparison.

	Sample in % N = 493	**Business Register 2020 in %** N = 3,374,583
Legal Form		
Sole Proprietorship	54.8	63.0
Partnership	21.3	12.8
Corporation	23.9	24.2
Employees		
0-9	66.5	86.9
10-49	26.8	10.4
50-250	6.7	2.2
more than 250	-	0.5

Notes: This table compares firm characteristics of our sample with the official German Business Register 2020. Our sample only includes companies with up to 250 employees. However, as only the categories '50-249' and '250 and more' are available in the German Business Register, we must accept a small inaccuracy by assigning observations from the German Business Register that have exactly 250 employees to the 'more than 250' category.

TABLE 2 Summary Statistics of Sample.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
Profit	493	130,162.100	200,135.000	20,500	37,000	74,000	142,500	2,075,000
Employees	493	15.014	30.254	1	2	5	14	250
Corporation	493	0.239	0.427	0	0	0	0	1
Sole Proprietorship	493	0.548	0.498	0	0	1	1	1
Partnership	493	0.213	0.410	0	0	0	0	1
Profit in 2020	471	0.862	0.345	0.000	1.000	1.000	1.000	1.000
Tax Assistance	493	0.921	0.270	0	1	1	1	1
Tax Department	493	0.014	0.118	0	0	0	0	1
Subjective Tax Literacy	493	0.759	0.428	0	1	1	1	1
Perceived Tax Complexity	484	4.653	0.693	1.000	4.000	5.000	5.000	5.000
Trust in Government	488	1.797	0.905	1.000	1.000	2.000	2.000	5.000
Tax Compliance Costs	488	0.336	0.211	0.050	0.200	0.300	0.500	1.000
Male	493	0.779	0.415	0	1	1	1	1
Female	493	0.201	0.401	0	0	0	0	1
Manager	486	0.971	0.167	0.000	1.000	1.000	1.000	1.000

Notes: This table presents summary statistics of our sample. Variable definitions and a more detailed version of this summary statistics can be found in Appendix A2.

TABLE 3 Mean Profit and Taxable Income.

		Sole Proprietorships		**Partnerships**	
		Single	Married	Single	Married
①	Profit	100.0%	100.0%	100.0%	100.0%
	+ Additional Income	0.2pp	27.5pp	0.1pp	24.9pp
②	Total Income	100.2%	127.5%	100.1%	124.9%
	− Special Expenses	-15.3pp	-24.6pp	-8.9pp	-16.7pp
③	Taxable Income	85%	102.9%	91.2%	108.2%

Notes: This table shows mean imputed values of *Additional Income* and *Special Expenses* relative to Profit by the four identified groups using *Propensity Score Matching* (1:10 nearest neighbor matching within a 0.1 caliper radius without replacement). Profit is the *provided profit* in our survey that is attributed evenly among the number of partners.

TABLE 4 ATR and MTR Misperception.

	Sole Proprietorships	**Partnerships**	**Corporations**	
	N = 270	N = 105	N = 118	
			retained	*distributed*
Perceived ATR	32.7%	37.4%	31.5%	43.4%
Actual ATR	19.7%	28%	29.8%	48.3%
ATR Misperception	**13.1pp*** **	**9.4pp*** **	**1.7pp** **	**-4.9pp*** **
Share >5pp (>10pp)	71.5% (58.5%)	76.2% (61%)	45.8% (22.9%)	66.1% (44.9%)
ATR Overestimation	15.9pp	13.5pp	6.3pp	9.1pp
Share >5pp (>10pp)	68.1% (57%)	66.7% (53.3%)	29.7% (14.4%)	20.3% (12.7%)
ATR Underestimation	-3.6pp	-9.3pp	-5.9pp	-12.9pp
Share >5pp (>10pp)	3.3% (1.5%)	9.5% (7.6%)	16.1% (8.5%)	45.8% (32.2%)
Perceived MTR	31.3%	37%	32.1%	43.4%
Actual MTR	34.7%	40.8%	29.8%	48.3%
MTR Misperception	**-3.4pp*** **	**-3.8pp** **	**2.3pp** **	**-4.9pp*** **
Share >5pp (>10pp)	58.9% (41.5%)	52.4% (34.3%)	49.2% (31.4%)	65.3% (50.8%)
MTR Overestimation	9.2pp	6pp	8.9pp	9.9pp
Share >5pp (>10pp)	21.9% (13.7%)	23.8% (12.4%)	33.1% (19.5%)	20.3% (16.1%)
MTR Underestimation	-14.1pp	-15.8pp	-7.7pp	-14.7pp
Share >5pp (>10pp)	37% (27.8%)	28.6% (21.9%)	16.1% (11.9%)	44.9% (34.7%)

Notes: This table shows descriptive evidence of ATR and MTR Misperception. Perceived ATR/MTR is the mean value of perceived ATRs by legal form. Actual ATRs/MTRs are calculated benchmark ATRs. ATR/MTR Misperception is calculated as perceived ATR/MTR minus Actual ATR/MTR. ***, **, and * denote significance at the 1%, 5%, and 10% levels of a two-sided t-test (ATR/MTR Misperception = 0). ATR/MTR Overestimation measures the average ATR/MTR Misperception in case of positive deviations, and ATR/MTR Underestimation measures the average ATR/MTR Misperception in case of negative deviations. Share >5pp (>10pp) gives the share of all firms that misperceive, overestimate, or underestimate the Actual ATR/MTR by more than plus or minus five (ten) percentage points.

TABLE 5 Sole Proprietorships and Partnerships - Driver Summary Statistics.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	345	0.133	0.107	0.001	0.045	0.123	0.192	0.650
$MTR_{retained}$ Misp.	345	0.108	0.111	0.001	0.024	0.064	0.160	0.517
Employees	345	1.430	1.179	0.000	0.000	1.386	2.197	5.298
Loss	345	0.171	0.377	0	0	0	0	1
Tax Assistance	345	0.928	0.260	0	1	1	1	1
Subjective Tax Literacy	345	0.733	0.443	0	0	1	1	1
Objective Tax Literacy	345	0.658	0.651	0	0	1	1	2
Tax Satisfaction	345	0.000	1.000	−2.573	−0.648	−0.131	0.541	3.956
Female	345	0.206	0.405	0	0	0	0	1

Notes: This table presents summary statistics of our variables used in the regression analyses for sole proprietorships and partnerships. Variable definitions and a more detailed version of this summary statistics can be found in Appendix A2.

TABLE 6 Corporations - Driver Summary Statistics.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	114	0.061	0.064	0.00005	0.008	0.042	0.098	0.295
$MTR_{retained}$ Misp.	114	0.085	0.091	0.00005	0.016	0.048	0.131	0.502
$ATR_{distributed}$ Misp.	114	0.113	0.095	0.001	0.032	0.083	0.183	0.393
$MTR_{distributed}$ Misp.	114	0.126	0.114	0.003	0.031	0.100	0.183	0.463
Employees	114	2.785	1.166	0.693	1.792	2.708	3.555	5.521
Loss	114	0.219	0.416	0	0	0	0	1
Tax Assistance	114	0.921	0.271	0	1	1	1	1
Subjective Tax Literacy	114	0.860	0.349	0	1	1	1	1
Objective Tax Literacy	114	0.877	0.640	0	0	1	1	2
Tax Satisfaction	114	0.000	1.000	−2.709	−0.684	−0.073	0.678	2.490
Female	114	0.132	0.340	0	0	0	0	1

Notes: This table presents summary statistics of our variables used in the regression analyses for corporations. Variable definitions and a more detailed version of this summary statistics can be found in Appendix A2.

TABLE 7 Sole Proprietorships and Partnerships - OLS Regression of ATR and MTR Misperception.

	Dependent variable:	
	ATR Misp.	MTR Misp.
	(1)	(2)
Employees	-0.020^{***}	-0.001
	(-4.573)	(-0.136)
Loss	0.018	0.015
	(1.008)	(0.861)
Tax Assistance	0.043^{**}	0.008
	(2.278)	(0.467)
Subjective Tax Literacy	-0.027^{**}	-0.014
	(-1.975)	(-0.952)
Objective Tax Literacy Level 1	-0.015	-0.057^{***}
	(-1.273)	(-4.416)
Objective Tax Literacy Level 2	-0.028^{*}	-0.098^{***}
	(-1.792)	(-7.015)
Tax Satisfaction	-0.019^{***}	-0.004
	(-3.527)	(-0.791)
Female	-0.003	-0.005
	(-0.214)	(-0.415)
Constant	0.150^{***}	0.146^{***}
	(6.554)	(6.366)
Observations	345	345
R^2	0.130	0.113
Adjusted R^2	0.109	0.091

Notes: This table shows the OLS regression results of ATR and MTR misperception for sole proprietorships and partnerships. The dependent variables in columns (1) and (2) represent ATR and MTR. All variables are defined in more detail in the Appendix A2. Robust standard errors, t-statistics are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 8 Corporations - OLS Regression of ATR and MTR Misperception.

	Dependent variable:			
	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)
Employees	-0.010^{*}	-0.010^{*}	0.008	0.002
	(-1.934)	(-1.845)	(1.132)	(0.208)
Loss	0.035^{*}	0.036	-0.004	-0.024
	(1.910)	(1.511)	(-0.199)	(-0.977)
Tax Assistance	0.011	0.024	0.002	0.032
	(0.486)	(1.250)	(0.056)	(1.318)
Subjective Tax Literacy	-0.003	-0.008	-0.039	-0.026
	(-0.133)	(-0.392)	(-1.611)	(-0.904)
Objective Tax Literacy Level 1	-0.029^{*}	-0.104^{***}	-0.052^{**}	-0.101^{***}
	(-1.907)	(-5.122)	(-2.257)	(-3.466)
Objective Tax Literacy Level 2	-0.024	-0.099^{***}	-0.081^{***}	-0.133^{***}
	(-1.280)	(-4.624)	(-2.870)	(-4.254)
Tax Satisfaction	-0.003	-0.016^{**}	-0.007	-0.001
	(-0.476)	(-2.131)	(-0.732)	(-0.111)
Female	-0.014	-0.016	0.036	0.027
	(-0.878)	(-0.908)	(1.313)	(0.873)
Constant	0.096^{***}	0.168^{***}	0.159^{***}	0.194^{***}
	(3.101)	(5.745)	(2.997)	(4.454)
Observations	114	114	114	114
R^2	0.153	0.420	0.143	0.230
Adjusted R^2	0.088	0.376	0.077	0.172

Notes: This table shows the OLS regression results of ATR and MTR misperception for corporations. The dependent variables in columns (1) and (2) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (3) and (4) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors, t-statistics are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 9 OLS Regression of Tax Rate Choice (Investment Decision).

	Sole Proprietorships & Partnerships			Corporations		
	Choice ATR	Choice MTR	Choice STR	Choice ATR	Choice MTR	Choice STR
	(1)	(2)	(3)	(4)	(5)	(6)
Overall Tax Misperception	**0.221**	**−0.673*****	**0.627***	**−1.055**	**−0.088**	**0.910**
	(0.599)	**(−3.864)**	**(1.876)**	**(−1.484)**	**(−0.179)**	**(1.251)**
Employees	−0.019	0.059***	−0.045**	0.085**	0.015	−0.069*
	(−0.769)	(3.200)	(−2.200)	(2.012)	(0.469)	(−1.765)
Loss	0.069	−0.038	0.018	0.012	−0.167**	−0.011
	(0.860)	(−0.775)	(0.234)	(0.092)	(−2.489)	(−0.099)
Tax Assistance	0.075	−0.236**	0.098	0.543***	−0.490***	0.039
	(0.732)	(−2.227)	(1.065)	(6.236)	(−2.759)	(0.238)
Subjective Tax Literacy	−0.094	0.088**	−0.017	−0.167	−0.129	0.236*
	(−1.392)	(2.443)	(−0.270)	(−0.950)	(−0.967)	(1.724)
Objective Tax Literacy Level 1	0.034	0.071*	−0.035	−0.215	0.217**	0.117
	(0.585)	(1.771)	(−0.633)	(−1.487)	(2.481)	(0.955)
Tax Satisfaction	−0.007	−0.002	0.039	0.030	−0.024	−0.039
	(−0.231)	(−0.105)	(1.299)	(0.530)	(−0.572)	(−0.730)
Female	−0.040	0.009	−0.011	−0.104	−0.016	0.195
	(−0.600)	(0.186)	(−0.174)	(−0.734)	(−0.180)	(1.271)
Constant	0.358**	0.280**	0.248*	0.052	0.594**	0.078
	(2.566)	(2.401)	(1.947)	(0.228)	(2.552)	(0.318)
Observations	301	301	301	99	99	99
R^2	0.021	0.148	0.045	0.112	0.193	0.091
Adjusted R^2	−0.005	0.124	0.019	0.033	0.122	0.010

Notes: This table shows the OLS regression results *Choice ATR*, *Choice MTR* and *Choice STR* in investment decisions for sole proprietorships and partnerships (column (1) - (3)) as well as corporations (column (4) - (6)). All variables are defined in more detail in the Appendix A2. Robust standard errors, t-statistics are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 10 OLS Regression of Desired Tax Cut.

	Dependent variable:		
	Sole Proprietorships & Partnerships	Corporations	
	Desired Tax $\text{Cut}_{\text{ret.}}$	Desired Tax $\text{Cut}_{\text{ret.}}$	Desired Tax $\text{Cut}_{\text{dis.}}$
	(1)	(2)	(3)
Misperception Overestimation$_{\text{(ret.)}}$	**0.055*****	**0.085*****	
	(5.695)	**(4.818)**	
Misperception Underestimation$_{\text{(ret.)}}$	**−0.035***	**−0.022**	
	(−1.710)	**(−1.156)**	
Misperception Overestimation$_{\text{dis.}}$			**0.108*****
			(3.366)
Misperception Underestimation$_{\text{dis.}}$			**−0.060*****
			(−2.991)
Employees	0.007*	−0.004	0.0003
	(1.679)	(−0.737)	(0.045)
Loss	0.023	0.028	0.037
	(1.376)	(1.246)	(1.536)
Tax Assistance	0.005	−0.006	0.049
	(0.255)	(−0.299)	(1.091)
Subjective Tax Literacy	−0.002	−0.015	−0.030
	(−0.143)	(−0.637)	(−0.960)
Objective Tax Literacy Level 1	−0.035***	0.027	−0.009
	(−3.387)	(1.349)	(−0.415)
Objective Tax Literacy Level 2	−0.062***	0.004	−0.023
	(−5.061)	(0.179)	(−0.737)
Tax Satisfaction	−0.026***	−0.0004	−0.026***
	(−5.457)	(−0.048)	(−3.031)
Female	−0.006	−0.012	0.009
	(−0.554)	(−0.581)	(0.403)
Constant	0.111***	0.114***	0.168***
	(4.685)	(3.394)	(2.976)
Observations	315	99	99
R^2	0.238	0.336	0.452
Adjusted R^2	0.213	0.260	0.390

Notes: This table shows the OLS regression results of firm's Desired Tax Cut for sole proprietorships and partnerships in column (1) and corporations in case of retained profits (ret.) in column (2) and distributed profits (dis.) in column (3). All variables are defined in more detail in the Appendix A2. Robust standard errors, t-statistics are in parentheses. * p < .1, ** p < .05, *** p < .01.

APPENDIX

A1 Survey Questionnaire

The survey structure is explained in Section 2. The survey has seven parts and shows all questions relevant for the analyses.

Part I: Firm Characteristics

1. What is the legal form of your firm?
2. In which craft do you operate? [Craft]

   In which industry do you operate? [Industry]
3. Which handicraft chamber is your firm affiliated with? [Craft]

   In which federal state is your firm registered? [Industry]
4. Is your firm part of a corporate group?
5. How many employees do you have who are subject to social insurance contributions? Please provide the exact number.

   How many employees do you have who are subject to social insurance contributions? Please provide the range. [If no exact number provided]
6. Is your firm part of a tax group?
7. Which of the following intervals most accurately corresponds to your sales (in euros) in the 2019 financial year?
8. Can you specify the number of shareholders involved in your firm?

   Which of the following intervals most closely matches the number of shareholders involved in your firm? [If no exact number provided]
9. Does your firm use the support of a tax advisor?

   Does your firm have its own tax department?

Part II: Income Taxation

1. How high do you estimate the income tax burden (in %) if your firm were to achieve a domestic annual result before taxes in the amount of [profit] €?
2. Assume that your firm can increase this annual profit before tax by [10% profit] € (10%). How high do you estimate the income tax burden (in %) on this additional [10% profit] €?
3. What income tax burden (in %) do you feel would be appropriate if your firm were to achieve domestic annual earnings before taxes in the amount of [profit] €?

Part III: Comparison of Income Taxation

1. How would you rate your firm's income tax burden compared to smaller, larger, or differently legally structured firm?
2. How would you rate your firm's income tax burden compared to foreign competitors?

Part IV: Taxes in Business Decisions

1. Do you consider income taxes when making investment or financing decisions?
2. Do you seek professional advice on tax aspects (e.g., from a tax advisor) when making investment or financing decisions?
3. Which specific tax rate do you reference when making business decisions?

Part V: Compliance Costs

1. Please estimate the share of the tax-related administrative burden in the total tax-related administrative expenses in your firm.

Part VI: Tax System

1. To what extent do you agree with the following statement? "German corporate taxation is too complex".
2. To what extent do you agree with the following statement? "The state handles the taxes it collects responsibly".

Part VII: Firm & Personal Characteristics

1. Has your firm generated profits in the fiscal years 2018, 2019, and 2020?
2. Do you expect your firm to make a profit in the fiscal year 2021?
3. What is your firm's (weighted) local tax multiplier?
4. Please state your gender.
5. Do you have any tax knowledge?
6. Do you work in an executive position?

A2 Variable Definition and Summary Statistics

TABLE 11 Variable Definition.

Name	Definition	Values
Misperception		
ATR Misperception	= Perceived ATR - Actual ATR	metric
MTR Misperception	= Perceived MTR - Actual MTR	metric
Firm Characteristics		
Employees	= Natural logarithm of the exact number/the average value of the range selected	metric
Corporation	= 1, if legal form is corporation, 0 otherwise	binary
Loss	= 1, if loss occurred in 2019 or 2020, 0 otherwise	binary
Tax Assistance	= 1, if firm gets support from tax advisor, 0 otherwise	binary
Personal Characteristics		
Subjective Tax Literacy	= 1, if respondent states tax knowledge, 0 otherwise	binary
Objective Tax Literacy	= Comprising indicator variables:	metric
Tax Schedule	= 1, if relation ATR to MTR accurate, 0 otherwise	binary
Tax Rate Choice	= 1, if using MTR in business decisions, 0 otherwise	binary
Tax Satisfaction	= Standardized variable comprising indicator variables:	metric
Perceived Tax Complexity	= Perceived tax complexity	metric
Trust in Government	= Stated trust in government	metric
Peers' Tax Burden	= Perception of (larger and smaller) peers' tax burden	metric
Tax Compliance Cost	= Estimated tax compliance costs as share of all compliance costs	metric
Female	= 1, if stated gender is female, 0 otherwise	binary
Consequences		
Choice ATR	= 1, if ATR used in investment decisions, 0 otherwise	binary
Choice MTR	= 1, if MTR used in investment decisions, 0 otherwise	binary
Choice STR	= 1, if STR used in investment decisions, 0 otherwise	binary
Desired Tax Cut	= Perceived ATR - Fair ATR, in case Perceived ATR > Fair ATR	metric
Overall Tax Misperception	= (ATR Misperception + MTR Misperception) / 2	metric
Misperception Overestimation	= 1, if overestimation of ATR > 5pp, 0 otherwise	binary
Misperception Underestimation	= 1, if underestimation of ATR > 5pp, 0 otherwise	binary

Notes: This table presents definitions of drivers analyzed in our regression analysis.

TABLE 12 Summary Statistics.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	459	0.115	0.102	0.00005	0.027	0.102	0.170	0.650
$ATR_{distributed}$ Misp.	459	0.128	0.104	0.001	0.038	0.117	0.186	0.650
$MTR_{retained}$ Misp.	459	0.103	0.107	0.00005	0.023	0.059	0.156	0.517
$MTR_{distributed}$ Misp.	459	0.113	0.112	0.001	0.024	0.067	0.167	0.517
Employees	459	1.767	1.313	0.000	0.693	1.609	2.639	5.521
Loss	459	0.183	0.387	0	0	0	0	1
Tax Assistance	459	0.926	0.262	0	1	1	1	1
Subjective Tax Literacy	459	0.765	0.425	0	1	1	1	1
Objective Tax Literacy	459	0.712	0.654	0	0	1	1	2
Tax Schedule	459	0.566	0.496	0	0	1	1	1
Tax Rate Choice	459	0.146	0.353	0	0	0	0	1
Tax Satisfaction	459	0.000	1.000	−2.925	−0.660	−0.136	0.577	3.868
Perceived Tax Complexity	459	0.000	1.000	−0.491	−0.491	−0.491	−0.491	5.518
Trust	459	0.000	1.000	−0.874	−0.874	0.247	0.247	3.608
Peers' Tax Burden	459	0.000	1.000	−2.111	−0.466	−0.466	1.179	1.179
Tax Compliance Cost	459	0.000	1.000	−3.177	−0.791	0.163	0.879	1.356
Female	459	0.187	0.391	0	0	0	0	1
Choice ATR	459	0.333	0.472	0	0	0	1	1
Choice MTR	459	0.146	0.353	0	0	0	0	1
Choice STR	459	0.275	0.447	0	0	0	1	1
Tax $Cut_{retained}$	414	0.142	0.091	0.005	0.080	0.120	0.200	0.700
Tax $Cut_{distributed}$	414	0.157	0.100	0.005	0.100	0.150	0.200	0.700
Overall Tax Misperception	459	0.109	0.084	0.000	0.049	0.088	0.154	0.584
$ATR_{retained}$ Overestimation	459	0.588	0.493	0	0	1	1	1
$ATR_{retained}$ Underestimation	459	0.074	0.262	0	0	0	0	1
$ATR_{distributed}$ Overestimation	459	0.566	0.496	0	0	1	1	1
$ATR_{distributed}$ Underestimation	459	0.146	0.353	0	0	0	0	1

Notes: This table presents summary statistics of our regression variables incl. standardized variables (z-score) incorporated Tax Satisfaction.

A3 Overestimation and Underestimation by Legal Form

We investigate overestimation and underestimation separately to decompose our findings on overall tax rate misperception. Therefore, we differentiate between overestimation and underestimation based on the absolute misperception.

TABLE 13 Sole Proprietorships and Partnerships - OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:			
	ATR Misp.		MTR Misp.	
	Over	Under	Over	Under
	(1)	(2)	(3)	(4)
Employees	−0.025***	0.011**	−0.014***	0.011
	(0.005)	(0.006)	(0.005)	(0.007)
Loss	0.043**	−0.013	0.021	0.012
	(0.021)	(0.022)	(0.022)	(0.024)
Tax Assistance	0.043**	0.048**	0.006	0.025
	(0.019)	(0.021)	(0.027)	(0.023)
Subjective Tax Literacy	−0.020	−0.035	−0.010	−0.011
	(0.015)	(0.028)	(0.016)	(0.021)
Objective Tax Literacy Level 1	−0.014	−0.021	0.015	−0.093***
	(0.013)	(0.022)	(0.016)	(0.017)
Objective Tax Literacy Level 2	−0.027*	−0.061***	−0.013	−0.142***
	(0.016)	(0.023)	(0.015)	(0.023)
Tax Satisfaction	−0.020***	0.010	−0.009	0.002
	(0.006)	(0.010)	(0.007)	(0.008)
Female	−0.008	0.014	−0.014	0.007
	(0.014)	(0.025)	(0.013)	(0.022)
Constant	0.158***	0.028	0.089***	0.146***
	(0.024)	(0.033)	(0.031)	(0.030)
Observations	296	49	170	175
R^2	0.166	0.239	0.096	0.200
Adjusted R^2	0.143	0.087	0.052	0.162

Notes: This table shows OLS regression results of ATR and MTR misperception for sole proprietorships and partnerships, which is divided into overestimation (columns (1) and (3)) and underestimation (columns (2) and (4)). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 14 Corporations - OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:							
	$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Employees	−0.012*	−0.009	−0.010	−0.010	−0.003	0.009	−0.003	−0.003
	(0.007)	(0.009)	(0.007)	(0.010)	(0.015)	(0.009)	(0.014)	(0.010)
Loss	0.050**	0.007	0.072**	−0.017	−0.001	−0.022	−0.013	−0.034
	(0.025)	(0.022)	(0.032)	(0.030)	(0.049)	(0.025)	(0.040)	(0.029)
Tax Assistance	0.036	−0.009	0.033*	0.001	0.023	−0.024	0.018	0.056
	(0.026)	(0.025)	(0.019)	(0.026)	(0.040)	(0.055)	(0.040)	(0.041)
Subjective Tax Literacy	−0.008	−0.020	−0.005	−0.017	0.019	−0.053*	0.006	−0.009
	(0.020)	(0.038)	(0.019)	(0.037)	(0.028)	(0.028)	(0.040)	(0.038)
Objective Tax Literacy Level 1	−0.001	−0.051***	−0.085***	−0.099***	0.003	−0.069**	−0.010	−0.159***
	(0.020)	(0.020)	(0.026)	(0.031)	(0.042)	(0.031)	(0.040)	(0.036)
Objective Tax Literacy Level 2	0.016	−0.068***	−0.069***	−0.123***	0.013	−0.110***	−0.021	−0.184***
	(0.022)	(0.022)	(0.025)	(0.030)	(0.071)	(0.036)	(0.048)	(0.037)
Tax Satisfaction	−0.008	−0.002	−0.026***	−0.005	−0.039**	−0.001	−0.051***	0.018
	(0.007)	(0.012)	(0.010)	(0.011)	(0.017)	(0.011)	(0.016)	(0.013)
Female	−0.060***	0.025	−0.060***	0.020	0.010	0.041	0.008	−0.007
	(0.017)	(0.020)	(0.020)	(0.024)	(0.024)	(0.031)	(0.025)	(0.039)
Constant	0.062*	0.144***	0.140***	0.193***	0.054	0.225***	0.092	0.238***
	(0.037)	(0.048)	(0.033)	(0.052)	(0.053)	(0.065)	(0.062)	(0.056)
Observations	72	42	69	45	42	72	46	68
R^2	0.245	0.359	0.489	0.500	0.173	0.252	0.257	0.412
Adjusted R^2	0.149	0.204	0.421	0.389	−0.027	0.157	0.096	0.332

Notes: This table shows OLS regression results of ATR and MTR misperception for corporations, which is divided into overestimation and underestimation. The dependent variables in columns (1)-(4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5)-(8) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

A4 Propensity Score Matching

In order to account for tax base effects when determining the actual tax rate, we match survey respondents with 10 observations from the official income tax statistics (FAST 2017, see Section 3.2). We are interested in *Additional Income* and *Special Expenses* of comparable entrepreneurs. After propensity score matching, we can check the balance of our covariates in Table 15.

TABLE 15 Summary of Balance for Matched Data.

	FAST 2017 N = 7,446	**Survey** N = 748
Profit		
Mean (SD)	99,300 (107,000)	102,000 (116,000)
Median [Min, Max]	68,600 [19,400; 11,300,000]	70,300 [20,200; 11,100,000]
Industry		
BC (Mining and quarrying and Manufacturing)	1,744 (23.4%)	176 (23.5%)
DE (Electricity, gas, steam and air conditioning supply and Water supply)	18 (0.2%)	2 (0.3%)
F (Construction)	3,386 (45.5%)	340 (45.5%)
G (Wholesale and retail trade)	800 (10.8%)	80 (10.7%)
I (Accommodation and food service activities)	20 (0.3%)	2 (0.3%)
J (Information and communication)	20 (0.3%)	2 (0.3%)
K (Financial and insurance activities)	40 (0.5%)	4 (0.5%)
L (Real estate activities)	40 (0.5%)	4 (0.5%)
M (Professional, scientific and technical activities)	160 (2.1%)	16 (2.1%)
N (Administrative and support service activities)	20 (0.3%)	2 (0.3%)
Q (Human health and social work activities)	20 (0.3%)	2 (0.3%)
S (Other services activities)	1,178 (15.8%)	118 (15.8%)
Legal		
Sole Proprietorship	5,400 (72.5%)	540 (72.2%)
Partnership	2,046 (27.5%)	208 (27.8%)
Married		
Single	3,707 (49.8%)	374 (50.0%)
Married	3,739 (50.2%)	374 (50.0%)

Notes: This table shows matched data of FAST 2017 and our survey observations. Industry is the 'Gewerbekennzahl (GKZ)' given in the official income tax statistics and can be derived from the industry asked in our survey. The number of observations (N = 748) represents twice of our matchable sole proprietorships and partnerships because we used them as both single and married taxpayers to account for the unknown marital status.

SUPPORTING INFORMATION

S1 Propensity Score Matching - Alternative Matching Approaches

In order to check the robustness of our matching results (1:10, caliper = 0.1) we run robustness checks for the *Propensity Score Matching* with a 1:10 matching and a caliper of 0.2 as well as a 1:20 matching with a caliper of 0.1.

TABLE 16 Robustness Check: ATR and MTR Misperception.

	Sole Proprietorships N = 270	**Partnerships** N = 105	**Corporations** N = 118	
			retained	*distributed*
	PSM 1:10 & caliper = 0.1 | PSM 1:10 & caliper = 0.2 | PSM 1:20 & caliper = 0.1			
ATR Misperception	**13.1pp*** | 13.1pp*** | 13.1pp*** **	**9.4pp*** | 9.4pp*** | 9.3pp*** **	**1.7pp** | 1.7pp** | 1.7pp** **	**-4.9pp*** | -4.9pp*** | -4.9pp*** **
ATR Overestimation	15.9pp | 15.9pp | 15.6pp	13.5pp | 13.7pp | 13.8pp	6.3pp | 6.3pp | 6.3pp	9.1pp | 9.1pp | 9.1pp
ATR Underestimation	-3.6pp | -3.6pp | -3.8pp	-9.3pp | -8.9pp | -8.5pp	-5.9pp | -5.9pp | -5.9pp	-12.9pp | -12.9pp| -12.9pp
MTR Misperception	**-3.4pp*** | -3.4pp*** | -3.4pp*** **	**-3.8pp** | -3.8pp** | -3.9pp** **	**2.3pp** | 2.3pp** | 2.3pp** **	**-4.9pp*** | -4.9pp*** | -4.9pp*** **
MTR Overestimation	9.2pp | 9.2pp | 9.5pp	6pp | 6pp | 6pp	8.9pp | 8.9pp | 8.9pp	9.9pp | 9.9pp | 9.9pp
MTR Underestimation	-14.1pp | -14.1pp | -13.7pp	-15.8pp | -15.8pp | -15.6pp	-7.7pp | -7.7pp | -7.7pp	-14.7pp | -14.7pp | -14.7pp

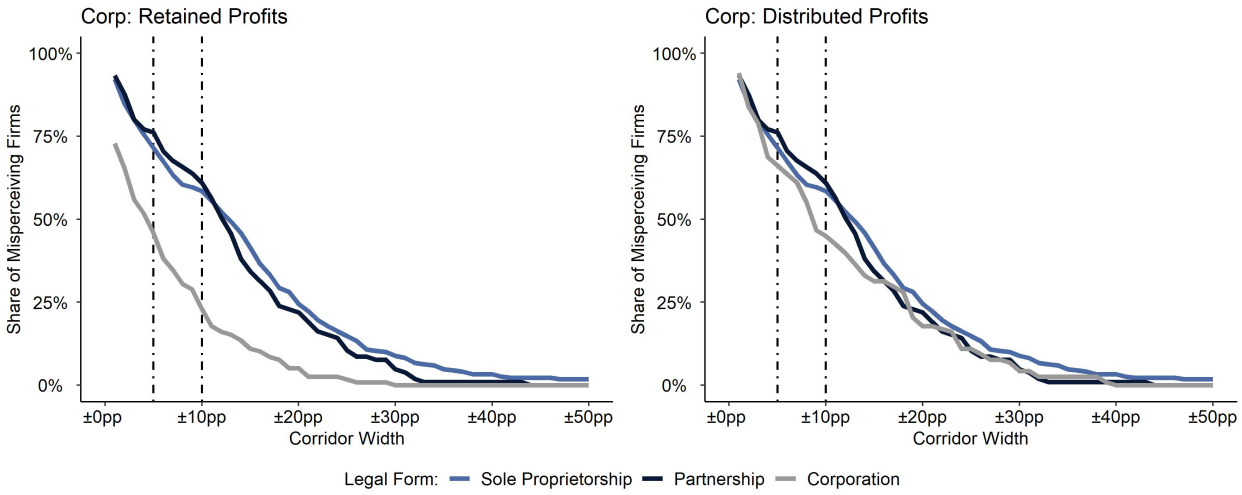
Notes: This table shows descriptive evidence of ATR and MTR misperception based on different matching criteria: 1:10 matching with caliper of 0.1, 1:10 matching with caliper of 0.2 and 1:20 matching with a caliper of 0.2. ATR/MTR Misperception is calculated as Perceived ATR/MTR minus Actual ATR/MTR. ***, **, and * denote significance at the 1%, 5%, and 10% levels of a two-sided t-test (ATR/MTR Misperception = 0). ATR/MTR Overestimation measures the average ATR/MTR Misperception in case of positive deviations, and ATR/MTR Underestimation measures the average ATR/MTR Misperception in case of negative deviations.

S2 Additional Analysis

S2.1 Corridor Sensitivity

In Section 4.1 we define firms as misperceiving if they exceed the selected corridor of ±5 or ±10pp. We chose a plus or minus five (ten) percentage points corridor because this results into quite large deviations of more than 15% (30%) given average tax rates of 30%. For the sake of transparency, we show in Figure 11 how the chosen corridor affects the share of firms misperceiving their tax burden.

FIGURE 11 Corridor Sensitivity.



Notes: This figure shows the average share of ATR misperceiving firms on defined corridors by legal form. Corporations in case of retained profits. The dot-dashed lines indicate the corridors used within this study.

S2.2 Correlation of Covariates

TABLE 17 Correlation Matrix of Covariates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log Employees (1)	1	-0.010	-0.034	0.020	0.144	0.158	-0.032
Loss (2)	-0.010	1	-0.038	0.001	-0.070	-0.085	0.004
Tax Assistance (3)	-0.034	-0.038	1	0.012	-0.098	-0.150	-0.035
Satisfaction (4)	0.020	0.001	0.012	1	-0.002	0.031	0.024
Subjective Tax Literacy (5)	0.144	-0.070	-0.098	-0.002	1	0.172	0.069
Objective Tax Literacy (6)	0.158	-0.085	-0.150	0.031	0.172	1	0.049
Female (7)	-0.032	0.004	-0.035	0.024	0.069	0.049	1

Notes: This table presents a correlation matrix of variables used in the regression analyses. The variance inflation factor does not indicate any problems regarding multicollinearity.

S2.3 Summary Statistics Entire Sample

We additionally provide summary statistics of variables used in our regressions for the whole sample, thus including non-corporations and corporations.

TABLE 18 Summary Statistics of Drivers.

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	459	0.115	0.102	0.00005	0.027	0.102	0.170	0.650
$ATR_{distributed}$ Misp.	459	0.128	0.104	0.001	0.038	0.117	0.186	0.650
$MTR_{retained}$ Misp.	459	0.103	0.107	0.00005	0.023	0.059	0.156	0.517
$MTR_{distributed}$ Misp.	459	0.113	0.112	0.001	0.024	0.067	0.167	0.517
Employees (log)	459	1.767	1.313	0.000	0.693	1.609	2.639	5.521
Loss	459	0.183	0.387	0	0	0	0	1
Tax Assistance	459	0.926	0.262	0	1	1	1	1
Subjective Tax Literacy	459	0.765	0.425	0	1	1	1	1
Objective Tax Literacy	459	0.712	0.654	0	0	1	1	2
Tax Satisfaction	459	0.000	1.000	−2.925	−0.660	−0.136	0.577	3.868
Female	459	0.187	0.391	0	0	0	0	1

Notes: This table presents summary statistics of our variables used in the regression analysis. For sole proprietorships and partnerships there is no difference between retained and distributed earnings. This display is only to illustrate differences in corporations' tax rate. Variable definitions and a more detailed version of this summary statistics can be found in Appendix A2.

S2.4 Summary Statistics by Size

We additionally provide summary statistics of variables used in our regressions for firms of different sizes (median split based on the number of employees) across all legal forms.

TABLE 19 Summary Statistics (5 or less employees).

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	233	0.137	0.107	0.001	0.048	0.127	0.201	0.608
$ATR_{distributed}$ Misp.	233	0.139	0.108	0.001	0.047	0.126	0.206	0.608
$MTR_{retained}$ Misp.	233	0.112	0.102	0.001	0.029	0.075	0.174	0.455
$MTR_{distributed}$ Misp.	233	0.112	0.106	0.001	0.026	0.074	0.171	0.463
Employees	233	0.721	0.627	0.000	0.000	0.693	1.386	1.609
Loss	233	0.189	0.392	0	0	0	0	1
Tax Assistance	233	0.927	0.261	0	1	1	1	1
Subjective Tax Literacy	233	0.704	0.458	0	0	1	1	1
Objective Tax Literacy	233	0.648	0.613	0	0	1	1	2
Tax Satisfaction	233	−0.014	0.970	−2.295	−0.660	−0.147	0.525	3.868
Female	233	0.206	0.405	0	0	0	0	1

Notes: This table presents summary statistics of our variables used in the regression analyses.

TABLE 20 Summary Statistics (more than 5 employees).

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
$ATR_{retained}$ Misp.	226	0.093	0.092	0.00005	0.022	0.066	0.139	0.650
$ATR_{distributed}$ Misp.	226	0.117	0.099	0.001	0.033	0.108	0.171	0.650
$MTR_{retained}$ Misp.	226	0.092	0.111	0.00005	0.018	0.046	0.124	0.517
$MTR_{distributed}$ Misp.	226	0.113	0.118	0.001	0.023	0.063	0.157	0.517
Employees	226	2.844	0.898	1.792	2.197	2.639	3.286	5.521
Loss	226	0.177	0.383	0	0	0	0	1
Tax Assistance	226	0.925	0.264	0	1	1	1	1
Subjective Tax Literacy	226	0.827	0.379	0	1	1	1	1
Objective Tax Literacy	226	0.779	0.689	0	0	1	1	2
Tax Satisfaction	226	0.014	1.032	−2.925	−0.639	−0.073	0.661	3.313
Female	226	0.168	0.375	0	0	0	0	1

Notes: This table presents summary statistics of our variables used in the regression analyses.

S3 Robustness Checks

The identification of firms' tax rate misperception is based on assumptions. We want to ensure that these assumptions do not erroneously inflate or deflate our baseline results. For this purpose, we conduct robustness checks for alternative samples, alternative identification of misperception and alternative regression methods.

S3.1 Samples

Subsample: Excluding Implausible MTRs

Comparing ATRs and MTRs, we find firms that reporting single digit MTRs although they report double digit ATRs. It may be that these firms did not understand the question about the marginal tax rate right. Therefore, we perform additional analyses for subsamples excluding these "implausible MTR" firms. Our results are robust to this variation.

TABLE 21 OLS Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	−0.018***	−0.007*	−0.010**	−0.009	0.007	0.006
	(0.005)	(0.004)	(0.005)	(0.006)	(0.007)	(0.008)
Loss	0.018	0.003	0.032*	0.039*	−0.004	−0.014
	(0.020)	(0.014)	(0.018)	(0.024)	(0.023)	(0.024)
Tax Assistance	0.050***	0.015	0.013	0.023	−0.0003	0.030
	(0.018)	(0.013)	(0.022)	(0.020)	(0.040)	(0.024)
Subjective Tax Literacy	−0.029*	−0.014	−0.007	−0.006	−0.031	−0.021
	(0.015)	(0.013)	(0.020)	(0.021)	(0.025)	(0.026)
Objective Tax Literacy Level 1	−0.026*	−0.015	−0.032**	−0.098***	−0.055**	−0.082***
	(0.013)	(0.012)	(0.015)	(0.021)	(0.024)	(0.028)
Objective Tax Literacy Level 2	−0.038**	−0.051***	−0.027	−0.093***	−0.085***	−0.114***
	(0.017)	(0.012)	(0.019)	(0.022)	(0.029)	(0.030)
Tax Satisfaction	−0.020***	−0.005	−0.004	−0.015*	−0.007	0.002
	(0.006)	(0.006)	(0.006)	(0.008)	(0.009)	(0.011)
Female	−0.0003	−0.013	−0.009	−0.018	0.028	0.019
	(0.013)	(0.011)	(0.017)	(0.017)	(0.028)	(0.028)
Constant	0.150***	0.109***	0.103***	0.156***	0.162***	0.158***
	(0.023)	(0.018)	(0.031)	(0.030)	(0.054)	(0.040)
Observations	315	315	111	111	111	111
R^2	0.138	0.063	0.168	0.382	0.130	0.172
Adjusted R^2	0.116	0.039	0.102	0.333	0.061	0.107

Notes: This table shows the OLS regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent sole proprietorships and partnerships. The dependent variables in columns (3) - (4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5) and (6) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 22 OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:											
	Sole Proprietorships & Partnerships				Corporations							
	ATR Misp.		MTR Misp.		$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Employees	-0.023^{***}	0.012^{*}	-0.011^{***}	-0.009	-0.012	-0.009	-0.012	-0.003	-0.007	0.008	0.005	0.004
	(0.005)	(0.006)	(0.004)	(0.009)	(0.007)	(0.009)	(0.008)	(0.009)	(0.016)	(0.009)	(0.020)	(0.010)
Loss	0.050^{**}	-0.014	-0.0004	-0.046	0.048^{*}	0.007	0.070^{**}	-0.012	-0.005	-0.022	-0.006	-0.025
	(0.022)	(0.023)	(0.016)	(0.036)	(0.026)	(0.022)	(0.032)	(0.026)	(0.049)	(0.026)	(0.057)	(0.026)
Tax Assistance	0.054^{***}	0.049^{*}	0.010	0.090^{**}	0.037	-0.009	0.025	-0.009	0.017	-0.023	0.043	0.017
	(0.017)	(0.025)	(0.014)	(0.042)	(0.026)	(0.025)	(0.028)	(0.023)	(0.042)	(0.053)	(0.047)	(0.036)
Subjective Tax Literacy	-0.021	-0.044	-0.011	-0.065^{*}	-0.010	-0.020	-0.001	-0.034	0.025	-0.045	0.014	-0.033
	(0.016)	(0.030)	(0.012)	(0.037)	(0.022)	(0.038)	(0.021)	(0.044)	(0.030)	(0.031)	(0.047)	(0.034)
Objective Tax Literacy Level 1	-0.026^{*}	-0.023	-0.010	-0.064^{*}	-0.005	-0.051^{***}	-0.090^{***}	-0.066^{**}	0.002	-0.075^{**}	-0.080	-0.077^{**}
	(0.014)	(0.024)	(0.011)	(0.035)	(0.021)	(0.020)	(0.026)	(0.029)	(0.042)	(0.033)	(0.065)	(0.038)
Objective Tax Literacy Level 2	-0.037^{**}	-0.064^{**}	-0.032^{***}	-0.166^{***}	0.013	-0.068^{***}	-0.076^{***}	-0.088^{***}	0.014	-0.117^{***}	-0.086	-0.117^{***}
	(0.017)	(0.027)	(0.011)	(0.034)	(0.023)	(0.022)	(0.028)	(0.029)	(0.072)	(0.038)	(0.097)	(0.038)
Tax Satisfaction	-0.021^{***}	0.011	-0.011^{**}	0.007	-0.007	-0.002	-0.023^{**}	-0.002	-0.042^{**}	-0.001	-0.012	0.006
	(0.006)	(0.010)	(0.005)	(0.015)	(0.007)	(0.012)	(0.010)	(0.011)	(0.017)	(0.011)	(0.033)	(0.012)
Female	-0.007	0.026	-0.010	-0.005	-0.056^{***}	0.025	-0.071^{***}	0.043^{**}	0.008	0.033	0.022	0.023
	(0.014)	(0.029)	(0.010)	(0.040)	(0.019)	(0.020)	(0.023)	(0.021)	(0.024)	(0.034)	(0.043)	(0.036)
Constant	0.156^{***}	0.034	0.100^{***}	0.203^{***}	0.067^{*}	0.144^{***}	0.156^{***}	0.159^{***}	0.066	0.228^{***}	0.103	0.187^{***}
	(0.023)	(0.035)	(0.019)	(0.046)	(0.039)	(0.048)	(0.043)	(0.051)	(0.054)	(0.066)	(0.074)	(0.048)
Observations	270	45	270	45	69	42	69	42	41	70	41	70
R^2	0.182	0.265	0.076	0.361	0.241	0.359	0.485	0.426	0.188	0.236	0.164	0.208
Adjusted R^2	0.157	0.102	0.048	0.219	0.140	0.204	0.416	0.287	−0.014	0.135	−0.044	0.104

Notes: This table shows OLS regression results of ATR and MTR misperception divided into overestimation and underestimation. The dependent variables in columns (1) - (4) represent the case for sole proprietorships and partnerships. Columns (5) - (8) where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (9) - (12) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

Subsample: Excluding fast Respondents

In line with Fisman et al. (2020) and Stantcheva (2021), we drop very fast respondents in this additional analysis. We drop respondents in the bottom 5% of the survey time distribution. These respondents may not have taken the survey seriously. Our results are robust to this variation.

TABLE 23 OLS Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	-0.019^{***}	0.001	-0.010^{*}	-0.011^{*}	0.011	0.002
	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)	(0.009)
Loss	0.017	0.018	0.033^{*}	0.034	0.003	−0.021
	(0.019)	(0.018)	(0.018)	(0.024)	(0.023)	(0.025)
Tax Assistance	0.037^{*}	0.004	0.027	0.022	0.037^{*}	0.037
	(0.020)	(0.018)	(0.024)	(0.023)	(0.022)	(0.026)
Subjective Tax Literacy	-0.033^{**}	−0.018	−0.009	−0.009	-0.042^{*}	−0.025
	(0.014)	(0.015)	(0.020)	(0.022)	(0.024)	(0.031)
Objective Tax Literacy Level 1	−0.018	-0.061^{***}	−0.023	-0.103^{***}	-0.048^{**}	-0.100^{***}
	(0.012)	(0.013)	(0.016)	(0.021)	(0.022)	(0.030)
Objective Tax Literacy Level 2	-0.033^{**}	-0.104^{***}	−0.014	-0.095^{***}	-0.072^{***}	-0.133^{***}
	(0.016)	(0.014)	(0.020)	(0.023)	(0.025)	(0.033)
Tax Satisfaction	-0.018^{***}	−0.004	−0.003	-0.018^{**}	−0.005	−0.003
	(0.006)	(0.006)	(0.006)	(0.008)	(0.009)	(0.011)
Female	−0.002	−0.001	−0.013	−0.017	0.046^{*}	0.030
	(0.013)	(0.013)	(0.017)	(0.017)	(0.027)	(0.031)
Constant	0.157^{***}	0.152^{***}	0.082^{***}	0.174^{***}	0.111^{***}	0.183^{***}
	(0.024)	(0.023)	(0.032)	(0.033)	(0.037)	(0.048)
Observations	327	327	108	108	108	108
R^2	0.130	0.123	0.154	0.416	0.160	0.236
Adjusted R^2	0.108	0.101	0.085	0.369	0.092	0.174

Notes: This table shows the OLS regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent sole proprietorships and partnerships. The dependent variables in columns (3) - (4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5) and (6) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 24 OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:											
	Sole Proprietorships & Partnerships				Corporations							
	ATR Misp.		MTR Misp.		$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Employees	-0.024^{***}	0.011^{*}	-0.012^{**}	0.012	-0.012^{*}	−0.010	−0.011	−0.011	−0.004	0.012	−0.004	−0.002
	(0.005)	(0.006)	(0.005)	(0.008)	(0.007)	(0.009)	(0.007)	(0.011)	(0.015)	(0.009)	(0.014)	(0.011)
Loss	0.042^{**}	−0.016	0.023	0.012	0.046^{*}	0.009	0.069^{**}	−0.018	−0.004	−0.014	−0.015	−0.027
	(0.022)	(0.023)	(0.023)	(0.024)	(0.025)	(0.022)	(0.032)	(0.030)	(0.049)	(0.026)	(0.041)	(0.029)
Tax Assistance	0.038^{**}	0.058^{**}	−0.001	0.021	0.039	0.011	0.032	0.003	0.023	0.028	0.018	0.062
	(0.019)	(0.028)	(0.027)	(0.024)	(0.025)	(0.029)	(0.027)	(0.028)	(0.041)	(0.027)	(0.040)	(0.051)
Subjective Tax Literacy	-0.027^{*}	−0.035	−0.016	−0.015	−0.018	−0.019	−0.008	−0.015	0.020	-0.058^{**}	0.007	−0.006
	(0.015)	(0.029)	(0.017)	(0.021)	(0.019)	(0.040)	(0.022)	(0.038)	(0.029)	(0.029)	(0.041)	(0.041)
Objective Tax Literacy Level 1	−0.016	−0.025	0.011	-0.095^{***}	0.006	-0.046^{**}	-0.082^{***}	-0.098^{***}	0.007	-0.063^{**}	−0.007	-0.161^{***}
	(0.013)	(0.024)	(0.016)	(0.018)	(0.020)	(0.020)	(0.027)	(0.031)	(0.043)	(0.030)	(0.041)	(0.038)
Objective Tax Literacy Level 2	-0.030^{*}	-0.066^{***}	−0.014	-0.146^{***}	0.019	-0.056^{**}	-0.069^{**}	-0.117^{***}	0.014	-0.096^{***}	−0.021	-0.186^{***}
	(0.016)	(0.025)	(0.014)	(0.023)	(0.021)	(0.025)	(0.028)	(0.031)	(0.072)	(0.031)	(0.049)	(0.042)
Tax Satisfaction	-0.019^{***}	0.009	−0.008	0.002	−0.009	0.001	-0.027^{***}	−0.005	-0.040^{**}	0.002	-0.051^{***}	0.017
	(0.006)	(0.010)	(0.008)	(0.008)	(0.007)	(0.015)	(0.010)	(0.013)	(0.017)	(0.010)	(0.016)	(0.015)
Female	−0.007	0.014	−0.010	0.013	-0.064^{***}	0.028	-0.063^{***}	0.019	0.008	0.055^{*}	0.005	−0.003
	(0.014)	(0.026)	(0.013)	(0.022)	(0.017)	(0.020)	(0.021)	(0.025)	(0.025)	(0.030)	(0.026)	(0.040)
Constant	0.166^{***}	0.023	0.096^{***}	0.152^{***}	0.067^{*}	0.120^{**}	0.146^{***}	0.192^{***}	0.055	0.154^{***}	0.094	0.222^{***}
	(0.024)	(0.031)	(0.032)	(0.031)	(0.037)	(0.058)	(0.041)	(0.054)	(0.053)	(0.041)	(0.062)	(0.069)
Observations	280	47	157	170	70	38	66	42	41	67	45	63
R^2	0.169	0.244	0.090	0.206	0.257	0.328	0.487	0.488	0.174	0.277	0.258	0.419
Adjusted R^2	0.145	0.084	0.041	0.166	0.159	0.143	0.415	0.364	−0.032	0.177	0.093	0.333

Notes: This table shows OLS regression results of ATR and MTR misperception divided into overestimation and underestimation. The dependent variables in columns (1) - (4) represent the case for sole proprietorships and partnerships. Columns (5) - (8) where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (9) - (12) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

S3.2 Identification of Tax Misperception

Profit as Taxable Income

In this section, we alternatively compute ATR and MTR misperception for the case where *provided profit* is used as taxable income. This reflects the idea that respondents do not necessarily consider the impact of *Additional Income* or *Special Expenses* on the tax base (see Section 3.2). Comparing these results to ATR and MTR misperception based on taxable income, shares of misperception vary only slightly. Our results are robust to this variation.

TABLE 25 ATR MTR Misperception (Profit).

	Sole Proprietorships	**Partnerships**	**Corporations**	
	N = 270	N = 105	N = 118	
			retained	*distributed*
Perceived ATR	32.7%	37.4%	31.5%	43.4%
Actual ATR	24.1%	31.3%	29.8%	48.3%
ATR Misperception	**8.6pp*** **	**6.1pp*** **	**1.7pp** **	**-4.9pp*** **
Share >5pp (>10pp)	59.6% (40%)	66.7% (43.8%)	45.8% (22.9%)	66.1% (44.9%)
ATR Overestimation	12.5pp	10.5pp	6.3pp	9.1pp
Share >5pp (>10pp)	55.9% (38.1%)	55.2% (36.2%)	29.7% (14.4%)	20.3% (12.7%)
ATR Underestimation	-3.8pp	-10.3pp	-5.9pp	-12.9pp
Share >5pp (>10pp)	3.7% (1.9%)	11.4% (7.6%)	16.1% (8.5%)	45.8% (32.2%)
Perceived MTR	31.3%	37%	32.1%	43.4%
Actual MTR	34.7%	40.8%	29.8%	48.3%
MTR Misperception	**-3.7pp*** **	**-4.1pp*** **	**2.3pp** **	**-4.9pp*** **
Share >5pp (>10pp)	56.7% (39.3%)	50.5% (32.4%)	49.2% (31.4%)	49.2% (50.8%)
MTR Overestimation	9pp	5.7pp	8.9pp	9.9pp
Share >5pp (>10pp)	19.6% (12.2%)	22.9% (9.5%)	33.1% (19.5%)	20.3% (16.1%)
MTR Underestimation	-12.8pp	-14.8pp	-7.7pp	-14.7pp
Share >5pp (>10pp)	37% (27%)	27.6% (22.9%)	16.1% (11.9%)	44.9% (34.7%)

Notes: This table shows descriptive evidence of ATR and MTR Misperception. Perceived ATR/MTR is the mean value of perceived ATRs by legal form. Actual ATRs/MTRs are calculated benchmark ATRs. ATR/MTR Misperception is calculated as perceived ATR/MTR minus Actual ATR/MTR, given in percentage points (pp). ***, **, and * denote significance at the 1%, 5%, and 10% levels of a two-sided t-test (ATR/MTR Misperception = 0). ATR/MTR Overestimation measures the average ATR/MTR Misperception in case of positive deviations, and ATR/MTR Underestimation measures the average ATR/MTR Misperception in case of negative deviations. Share >5pp (>10pp) gives the share of all firms that misperceive, overestimate, or underestimate the Actual ATR/MTR by more than plus or minus five (ten) percentage points.

TABLE 26 OLS Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	−0.013***	0.003	−0.010*	−0.010*	0.008	0.002
	(0.004)	(0.005)	(0.005)	(0.006)	(0.007)	(0.009)
Loss	0.022	0.015	0.035*	0.036	−0.004	−0.024
	(0.016)	(0.016)	(0.018)	(0.024)	(0.023)	(0.024)
Tax Assistance	0.035**	0.003	0.011	0.024	0.002	0.032
	(0.016)	(0.017)	(0.023)	(0.019)	(0.041)	(0.024)
Subjective Tax Literacy	−0.026**	−0.012	−0.003	−0.008	−0.039	−0.026
	(0.013)	(0.014)	(0.019)	(0.021)	(0.024)	(0.029)
Objective Tax Literacy Level 1	−0.013	−0.057***	−0.029*	−0.104***	−0.052**	−0.101***
	(0.011)	(0.012)	(0.015)	(0.020)	(0.023)	(0.029)
Objective Tax Literacy Level 2	−0.029**	−0.100***	−0.024	−0.099***	−0.081***	−0.133***
	(0.013)	(0.013)	(0.019)	(0.022)	(0.028)	(0.031)
Tax Satisfaction	−0.014***	−0.003	−0.003	−0.016**	−0.007	−0.001
	(0.005)	(0.005)	(0.006)	(0.008)	(0.009)	(0.011)
Female	−0.008	−0.004	−0.014	−0.016	0.036	0.027
	(0.011)	(0.013)	(0.017)	(0.017)	(0.027)	(0.031)
Constant	0.112***	0.138***	0.096***	0.168***	0.159***	0.194***
	(0.019)	(0.022)	(0.031)	(0.029)	(0.053)	(0.044)
Observations	345	345	114	114	114	114
R^2	0.113	0.119	0.153	0.420	0.143	0.230
Adjusted R^2	0.091	0.098	0.088	0.376	0.077	0.172

Notes: This table shows the OLS regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent sole proprietorships and partnerships. The dependent variables in columns (3) - (4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5) and (6) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 27 OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:											
	Sole Proprietorships & Partnerships				Corporations							
	ATR Misp.		MTR Misp.		$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Employees	-0.019^{***}	0.012^{*}	-0.011^{**}	0.015^{**}	-0.012^{*}	-0.009	-0.010	-0.010	-0.003	0.009	-0.003	-0.003
	(0.004)	(0.006)	(0.005)	(0.007)	(0.007)	(0.009)	(0.007)	(0.010)	(0.015)	(0.009)	(0.014)	(0.010)
Loss	0.038^{**}	-0.009	0.023	0.011	0.050^{**}	0.007	0.072^{**}	-0.017	-0.001	-0.022	-0.013	-0.034
	(0.019)	(0.025)	(0.020)	(0.023)	(0.025)	(0.022)	(0.032)	(0.030)	(0.049)	(0.025)	(0.040)	(0.029)
Tax Assistance	0.035^{**}	0.058^{***}	0.009	0.017	0.036	-0.009	0.033^{*}	0.001	0.023	-0.024	0.018	0.056
	(0.018)	(0.021)	(0.025)	(0.022)	(0.026)	(0.025)	(0.019)	(0.026)	(0.040)	(0.055)	(0.040)	(0.041)
Subjective Tax Literacy	-0.019	-0.047	-0.005	-0.011	-0.008	-0.020	-0.005	-0.017	0.019	-0.053^{*}	0.006	-0.009
	(0.013)	(0.032)	(0.015)	(0.020)	(0.020)	(0.038)	(0.019)	(0.037)	(0.028)	(0.028)	(0.040)	(0.038)
Objective Tax Literacy Level 1	-0.011	-0.031	0.013	-0.093^{***}	-0.001	-0.051^{***}	-0.085^{***}	-0.099^{***}	0.003	-0.069^{**}	-0.010	-0.159^{***}
	(0.012)	(0.025)	(0.015)	(0.016)	(0.020)	(0.020)	(0.026)	(0.031)	(0.042)	(0.031)	(0.040)	(0.036)
Objective Tax Literacy Level 2	-0.025^{*}	-0.060^{**}	-0.019	-0.140^{***}	0.016	-0.068^{***}	-0.069^{***}	-0.123^{***}	0.013	-0.110^{***}	-0.021	-0.184^{***}
	(0.014)	(0.030)	(0.014)	(0.022)	(0.022)	(0.022)	(0.025)	(0.030)	(0.071)	(0.036)	(0.048)	(0.037)
Tax Satisfaction	-0.017^{***}	0.010	-0.008	0.002	-0.008	-0.002	-0.026^{***}	-0.005	-0.039^{**}	-0.001	-0.051^{***}	0.018
	(0.005)	(0.011)	(0.006)	(0.008)	(0.007)	(0.012)	(0.010)	(0.011)	(0.017)	(0.011)	(0.016)	(0.013)
Female	-0.012	0.008	-0.015	0.009	-0.060^{***}	0.025	-0.060^{***}	0.020	0.010	0.041	0.008	-0.007
	(0.013)	(0.030)	(0.012)	(0.022)	(0.017)	(0.020)	(0.020)	(0.024)	(0.024)	(0.031)	(0.025)	(0.039)
Constant	0.117^{***}	0.043	0.073^{**}	0.142^{***}	0.062^{*}	0.144^{***}	0.140^{***}	0.193^{***}	0.054	0.225^{***}	0.092	0.238^{***}
	(0.022)	(0.037)	(0.029)	(0.029)	(0.037)	(0.048)	(0.033)	(0.052)	(0.053)	(0.065)	(0.062)	(0.056)
Observations	296	49	170	175	72	42	69	45	42	72	46	68
R^2	0.147	0.247	0.085	0.206	0.245	0.359	0.489	0.500	0.173	0.252	0.257	0.412
Adjusted R^2	0.124	0.096	0.040	0.168	0.149	0.204	0.421	0.389	-0.027	0.157	0.096	0.332

Notes: This table shows OLS regression results of ATR and MTR misperception divided into overestimation and underestimation. The dependent variables in columns (1)-(4) represent the case for sole proprietorships and partnerships. Columns (5) - (8) where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (9)- (12) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

Total Income as Taxable Income

In this section, we alternatively compute ATR and MTR misperception for the case where *Total Income* is used as taxable income as in our baseline analysis. This reflects the idea that respondents do consider other *Additional Income* but not *Special Expenses* (see Section 3.2). Comparing these results to ATR and MTR misperception based on taxable income, shares of misperception vary only slightly. Our results are robust to this variation.

TABLE 28 ATR and MTR Misperception (Total Income).

	Sole Proprietorships	**Partnerships**	**Corporations**	
	N = 270	N = 105	N = 118	
			retained	*distributed*
Perceived ATR	32.7%	37.4%	31.5%	43.4%
Actual ATR	24.4%	31.4%	29.8%	48.3%
ATR Misperception	**8.3pp*** **	**6pp*** **	**1.7pp** **	**-4.9pp*** **
Share >5pp (>10pp)	64.8% (40.7%)	65.7% (42.9%)	45.8% (22.9%)	66.1% (44.9%)
ATR Overestimation	12.3pp	10.4pp	6.3pp	9.1pp
Share >5pp (>10pp)	55.9% (37.8%)	55.2% (34.3%)	29.7% (14.4%)	20.3% (12.7%)
ATR Underestimation	-5pp	-10.7pp	-5.9pp	-12.9pp
Share >5pp (>10pp)	8.9% (3%)	10.5% (8.6%)	16.1% (8.5%)	45.8% (32.2%)
Perceived MTR	31.3%	37%	32.1%	43.4%
Actual MTR	34.7%	40.8%	29.8%	48.3%
MTR Misperception	**-5.4pp*** **	**-4.8pp*** **	**2.3pp** **	**-4.9pp*** **
Share >5pp (>10pp)	60.4% (45.6%)	52.4% (33.3%)	49.2% (31.4%)	65.3% (50.8%)
MTR Overestimation	9.3pp	5.7pp	8.9pp	9.9pp
Share >5pp (>10pp)	19.6% (12.2%)	22.9% (9.5%)	33.1% (19.5%)	20.3% (16.1%)
MTR Underestimation	-15.1pp	-15.1pp	-7.7pp	-14.7pp
Share >5pp (>10pp)	40.7% (33.3%)	29.5% (23.8%)	16.1% (11.9%)	44.9% (34.7%)

Notes: This table shows descriptive evidence of ATR and MTR Misperception. Perceived ATR/MTR is the mean value of perceived ATRs by legal form. Actual ATRs/MTRs are calculated benchmark ATRs. ATR/MTR Misperception is calculated as perceived ATR/MTR minus Actual ATR/MTR. ***, **, and * denote significance at the 1%, 5%, and 10% levels of a two-sided t-test (ATR/MTR Misperception = 0). ATR/MTR Overestimation measures the average ATR/MTR Misperception in case of positive deviations, and ATR/MTR Underestimation measures the average ATR/MTR Misperception in case of negative deviations. Share >5pp (>10pp) gives the share of all firms that misperceive, overestimate, or underestimate the Actual ATR/MTR by more than plus or minus five (ten) percentage points.

TABLE 29 OLS Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	−0.014***	−0.003	−0.010*	−0.010*	0.008	0.002
	(0.004)	(0.005)	(0.005)	(0.006)	(0.007)	(0.009)
Loss	0.023	0.021	0.035*	0.036	−0.004	−0.024
	(0.016)	(0.017)	(0.018)	(0.024)	(0.023)	(0.024)
Tax Assistance	0.038**	−0.007	0.011	0.024	0.002	0.032
	(0.016)	(0.018)	(0.023)	(0.019)	(0.041)	(0.024)
Subjective Tax Literacy	−0.025**	−0.012	−0.003	−0.008	−0.039	−0.026
	(0.013)	(0.015)	(0.019)	(0.021)	(0.024)	(0.029)
Objective Tax Literacy Level 1	−0.012	−0.069***	−0.029*	−0.104***	−0.052**	−0.101***
	(0.011)	(0.013)	(0.015)	(0.020)	(0.023)	(0.029)
Objective Tax Literacy Level 2	−0.030**	−0.112***	−0.024	−0.099***	−0.081***	−0.133***
	(0.013)	(0.014)	(0.019)	(0.022)	(0.028)	(0.031)
Tax Satisfaction	−0.015***	−0.002	−0.003	−0.016**	−0.007	−0.001
	(0.005)	(0.006)	(0.006)	(0.008)	(0.009)	(0.011)
Female	−0.010	−0.003	−0.014	−0.016	0.036	0.027
	(0.011)	(0.014)	(0.017)	(0.017)	(0.027)	(0.031)
Constant	0.111***	0.174***	0.096***	0.168***	0.159***	0.194***
	(0.020)	(0.024)	(0.031)	(0.029)	(0.053)	(0.044)
Observations	345	345	114	114	114	114
R^2	0.118	0.135	0.153	0.420	0.143	0.230
Adjusted R^2	0.097	0.114	0.088	0.376	0.077	0.172

Notes: This table shows the OLS regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent sole proprietorships and partnerships. The dependent variables in columns (3) - (4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5) and (6) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 30 OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:											
	Sole Proprietorships & Partnerships				Corporations							
	ATR Misp.		MTR Misp.		$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Employees	-0.018^{***}	0.006	-0.011^{**}	0.003	-0.012^{*}	−0.009	−0.010	−0.010	−0.003	0.009	−0.003	−0.003
	(0.004)	(0.007)	(0.005)	(0.007)	(0.007)	(0.009)	(0.007)	(0.010)	(0.015)	(0.009)	(0.014)	(0.010)
Loss	0.040^{**}	−0.027	0.023	0.019	0.050^{**}	0.007	0.072^{**}	−0.017	−0.001	−0.022	−0.013	−0.034
	(0.019)	(0.028)	(0.021)	(0.024)	(0.025)	(0.022)	(0.032)	(0.030)	(0.049)	(0.025)	(0.040)	(0.029)
Tax Assistance	0.036^{**}	0.073^{**}	0.005	0.011	0.036	−0.009	0.033^{*}	0.001	0.023	−0.024	0.018	0.056
	(0.018)	(0.028)	(0.024)	(0.025)	(0.026)	(0.025)	(0.019)	(0.026)	(0.040)	(0.055)	(0.040)	(0.041)
Subjective Tax Literacy	−0.020	−0.052	−0.003	−0.013	−0.008	−0.020	−0.005	−0.017	0.019	-0.053^{*}	0.006	−0.009
	(0.013)	(0.033)	(0.016)	(0.022)	(0.020)	(0.038)	(0.019)	(0.037)	(0.028)	(0.028)	(0.040)	(0.038)
Objective Tax Literacy Level 1	−0.010	−0.033	0.013	-0.097^{***}	−0.001	-0.051^{***}	-0.085^{***}	-0.099^{***}	0.003	-0.069^{**}	−0.010	-0.159^{***}
	(0.012)	(0.027)	(0.015)	(0.018)	(0.020)	(0.020)	(0.026)	(0.031)	(0.042)	(0.031)	(0.040)	(0.036)
Objective Tax Literacy Level 2	-0.023^{*}	-0.090^{***}	−0.017	-0.153^{***}	0.016	-0.068^{***}	-0.069^{***}	-0.123^{***}	0.013	-0.110^{***}	−0.021	-0.184^{***}
	(0.014)	(0.029)	(0.014)	(0.023)	(0.022)	(0.022)	(0.025)	(0.030)	(0.071)	(0.036)	(0.048)	(0.037)
Tax Satisfaction	-0.017^{***}	0.005	−0.008	0.002	−0.008	−0.002	-0.026^{***}	−0.005	-0.039^{**}	−0.001	-0.051^{***}	0.018
	(0.005)	(0.012)	(0.006)	(0.008)	(0.007)	(0.012)	(0.010)	(0.011)	(0.017)	(0.011)	(0.016)	(0.013)
Female	−0.014	0.006	−0.016	0.013	-0.060^{***}	0.025	-0.060^{***}	0.020	0.010	0.041	0.008	−0.007
	(0.013)	(0.029)	(0.012)	(0.023)	(0.017)	(0.020)	(0.020)	(0.024)	(0.024)	(0.031)	(0.025)	(0.039)
Constant	0.114^{***}	0.069^{*}	0.076^{***}	0.191^{***}	0.062^{*}	0.144^{***}	0.140^{***}	0.193^{***}	0.054	0.225^{***}	0.092	0.238^{***}
	(0.022)	(0.042)	(0.028)	(0.032)	(0.037)	(0.048)	(0.033)	(0.052)	(0.053)	(0.065)	(0.062)	(0.056)
Observations	296	49	170	175	72	42	69	45	42	72	46	68
R^2	0.148	0.231	0.086	0.196	0.245	0.359	0.489	0.500	0.173	0.252	0.257	0.412
Adjusted R^2	0.124	0.077	0.041	0.157	0.149	0.204	0.421	0.389	−0.027	0.157	0.096	0.332

Notes: This table shows OLS regression results of ATR and MTR misperception divided into overestimation and underestimation. The dependent variables in columns (1)-(4) represent the case for sole proprietorships and partnerships. Columns (5) - (8) where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (9)- (12) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

Robust Misperception

In this section, we alternatively compute ATR and MTR misperception based on *Taxable Income*. However, we take into account that introducing a *provided profit* plus adding average *Additional Income* and *Special Expenses* could lead to errors (see Section 3.2). Therefore, we adjust the perceived tax rate by allowing for additional errors of ±2pp, that is perceived tax rates above the actual tax rate are adjusted by -2pp and perceived tax rates under the actual tax rate by +2pp. Comparing these results to ATR and MTR misperception based on *Taxable Income*, shares of misperception vary only slightly. Our results are robust to this variation.

TABLE 31 ATR and MTR Misperception (Robust).

	Sole Proprietorships N = 270	**Partnerships** N = 105	**Corporations** N = 118	
			retained	*distributed*
Perceived ATR	32.7%	37.4%	31.5%	43.4%
Actual ATR	19.7%	28%	29.8%	48.3%
ATR Misperception	**11.6pp*** **	**8.1pp*** **	**1.3pp***	**-4.3pp*** **
Share >5pp (>10pp)	63.3% (52.2%)	67.6% (50.5%)	34.7% (16.1%)	61% (39.8%)
ATR Overestimation	15.3pp	12.6pp	6.9pp	9.5pp
Share >5pp (>10pp)	61.1% (50.7%)	58.1% (44.8%)	20.3% (8.5%)	18.6% (8.5%)
ATR Underestimation	-4.9pp	-11pp	-7.5pp	-12.5pp
Share >5pp (>10pp)	2.2% (1.5%)	9.5% (5.7%)	14.4% (7.6%)	42.4% (31.4%)
Perceived MTR	31.3%	37%	32.1%	43.4%
Actual MTR	34.7%	40.8%	29.8%	48.3%
MTR Misperception	**-3.2pp*** **	**-3.9pp*** **	**1.9pp***	**-4.4pp*** **
Share >5pp (<10pp)	49.6% (39.3%)	41% (29.5%)	43.2% (27.1%)	60.2% (44.1%)
MTR Overestimation	9.6pp	6.3pp	9.3pp	11.6pp
Share >5pp (>10pp)	16.7% (12.6%)	15.2% (8.6%)	27.1% (16.1%)	18.6% (11.9%)
MTR Underestimation	-14pp	-16.9pp	-9.6pp	-14.4pp
Share >5pp (>10pp)	33% (26.7%)	25.7% (21%)	16.1% (11%)	41.5% (32.2%)

Notes: This table shows descriptive evidence of ATR and MTR Misperception. Perceived ATR/MTR is the mean value of perceived ATRs by legal form. Actual ATRs/MTRs are calculated benchmark ATRs. ATR/MTR Misperception is calculated as perceived ATR/MTR minus Actual ATR/MTR. ***, **, and * denote significance at the 1%, 5%, and 10% levels of a two-sided t-test (ATR/MTR Misperception = 0). ATR/MTR Overestimation measures the average ATR/MTR Misperception in case of positive deviations, and ATR/MTR Underestimation measures the average ATR/MTR Misperception in case of negative deviations. Share >5pp (>10pp) gives the share of all firms that misperceive, overestimate, or underestimate the Actual ATR/MTR by more than plus or minus five (ten) percentage points.

TABLE 32 OLS Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	-0.020^{***}	-0.0004	-0.009^{**}	-0.010^{*}	0.008	0.002
	(0.004)	(0.005)	(0.005)	(0.005)	(0.007)	(0.008)
Loss	0.018	0.014	0.033^{*}	0.034	-0.005	-0.024
	(0.018)	(0.017)	(0.017)	(0.023)	(0.022)	(0.024)
Tax Assistance	0.042^{**}	0.008	0.006	0.017	0.002	0.031
	(0.018)	(0.017)	(0.021)	(0.018)	(0.041)	(0.024)
Subjective Tax Literacy	-0.027^{**}	-0.013	-0.002	-0.006	-0.038	-0.025
	(0.014)	(0.014)	(0.018)	(0.020)	(0.024)	(0.029)
Objective Tax Literacy Level 1	-0.015	-0.055^{***}	-0.025^{*}	-0.099^{***}	-0.052^{**}	-0.101^{***}
	(0.012)	(0.013)	(0.014)	(0.020)	(0.023)	(0.029)
Objective Tax Literacy Level 2	-0.026^{*}	-0.094^{***}	-0.023	-0.097^{***}	-0.080^{***}	-0.131^{***}
	(0.015)	(0.014)	(0.018)	(0.021)	(0.028)	(0.031)
Tax Satisfaction	-0.019^{***}	-0.004	-0.004	-0.016^{**}	-0.006	-0.001
	(0.005)	(0.006)	(0.006)	(0.007)	(0.009)	(0.010)
Female	-0.003	-0.006	-0.014	-0.018	0.035	0.026
	(0.012)	(0.013)	(0.015)	(0.017)	(0.027)	(0.030)
Constant	0.131^{***}	0.127^{***}	0.082^{***}	0.154^{***}	0.141^{***}	0.176^{***}
	(0.022)	(0.023)	(0.028)	(0.028)	(0.053)	(0.043)
Observations	345	345	114	114	114	114
R^2	0.130	0.109	0.153	0.414	0.143	0.232
Adjusted R^2	0.109	0.088	0.089	0.370	0.077	0.173

Notes: This table shows the OLS regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent sole proprietorships and partnerships. The dependent variables in columns (3) - (4) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (5) and (6) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

TABLE 33 OLS Regression of ATR and MTR Over-/Underestimation.

	Dependent variable:											
	Sole Proprietorships & Partnerships				Corporations							
	ATR Misp.		MTR Misp.		$ATR_{ret.}$ Misp.		$MTR_{ret.}$ Misp.		$ATR_{dis.}$ Misp.		$MTR_{dis.}$ Misp.	
	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Employees	-0.024^{***}	0.010^{*}	-0.013^{***}	0.011	-0.012^{*}	-0.007	-0.011	-0.009	-0.004	0.009	-0.004	-0.003
	(0.005)	(0.005)	(0.005)	(0.007)	(0.006)	(0.009)	(0.007)	(0.010)	(0.015)	(0.009)	(0.014)	(0.010)
Loss	0.043^{**}	-0.015	0.021	0.012	0.049^{**}	0.004	0.071^{**}	-0.020	-0.0005	-0.023	-0.012	-0.034
	(0.021)	(0.021)	(0.022)	(0.023)	(0.024)	(0.020)	(0.031)	(0.029)	(0.048)	(0.025)	(0.040)	(0.028)
Tax Assistance	0.043^{**}	0.044^{**}	0.006	0.024	0.027	-0.014	0.025	-0.008	0.027	-0.026	0.021	0.052
	(0.019)	(0.019)	(0.026)	(0.023)	(0.022)	(0.022)	(0.017)	(0.023)	(0.039)	(0.053)	(0.039)	(0.041)
Subjective Tax Literacy	-0.021	-0.034	-0.008	-0.011	-0.008	-0.018	-0.003	-0.015	0.018	-0.051^{*}	0.005	-0.009
	(0.014)	(0.027)	(0.016)	(0.021)	(0.018)	(0.036)	(0.019)	(0.036)	(0.028)	(0.028)	(0.039)	(0.038)
Objective Tax Literacy Level 1	-0.014	-0.018	0.017	-0.093^{***}	0.001	-0.046^{**}	-0.080^{***}	-0.093^{***}	0.003	-0.069^{**}	-0.011	-0.157^{***}
	(0.013)	(0.021)	(0.016)	(0.017)	(0.019)	(0.018)	(0.025)	(0.030)	(0.041)	(0.030)	(0.039)	(0.036)
Objective Tax Literacy Level 2	-0.026	-0.052^{**}	-0.010	-0.139^{***}	0.014	-0.064^{***}	-0.068^{***}	-0.119^{***}	0.016	-0.108^{***}	-0.017	-0.182^{***}
	(0.016)	(0.021)	(0.014)	(0.022)	(0.021)	(0.020)	(0.025)	(0.029)	(0.068)	(0.035)	(0.047)	(0.037)
Tax Satisfaction	-0.020^{***}	0.011	-0.009	0.002	-0.009	-0.003	-0.026^{***}	-0.006	-0.039^{**}	-0.0005	-0.050^{***}	0.018
	(0.006)	(0.010)	(0.007)	(0.008)	(0.007)	(0.011)	(0.010)	(0.011)	(0.016)	(0.011)	(0.016)	(0.013)
Female	-0.008	0.011	-0.016	0.007	-0.058^{***}	0.023	-0.062^{***}	0.016	0.011	0.040	0.007	-0.007
	(0.014)	(0.024)	(0.012)	(0.022)	(0.016)	(0.018)	(0.020)	(0.024)	(0.023)	(0.031)	(0.025)	(0.039)
Constant	0.138^{***}	0.018	0.068^{**}	0.127^{***}	0.054	0.124^{***}	0.127^{***}	0.179^{***}	0.033	0.207^{***}	0.073	0.221^{***}
	(0.024)	(0.030)	(0.030)	(0.030)	(0.033)	(0.045)	(0.031)	(0.050)	(0.051)	(0.064)	(0.060)	(0.055)
Observations	296	49	170	175	72	42	69	45	42	72	46	68
R^2	0.165	0.236	0.095	0.199	0.254	0.356	0.490	0.492	0.178	0.255	0.260	0.413
Adjusted R^2	0.142	0.083	0.050	0.161	0.160	0.200	0.422	0.379	-0.022	0.160	0.100	0.333

Notes: This table shows OLS regression results of ATR and MTR misperception divided into overestimation and underestimation. The dependent variables in columns (1)-(4) represent the case for sole proprietorships and partnerships. Columns (5) - (8) where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (9)- (12) represent the case where corporations report their ATR and MTR on distributed profits (dis.). Note, that underestimates like overestimates have a positive sign. All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * p < .1, ** p < .05, *** p < .01.

S3.3 Regression Method

To account for close to zero values of overall ATR and MTR misperception, we additionally run Tobit regressions. Regression results can be found in Table 34. Our results are robust to this variation.

TABLE 34 Tobit Regression of ATR and MTR Misperception.

	Dependent variable:					
	Sole Proprietorships & Partnerships		Corporations			
	ATR Misp.	MTR Misp.	$ATR_{ret.}$ Misp.	$MTR_{ret.}$ Misp.	$ATR_{dis.}$ Misp.	$MTR_{dis.}$ Misp.
	(1)	(2)	(3)	(4)	(5)	(6)
Employees	−0.020***	−0.001	−0.010**	−0.010*	0.008	0.002
	(0.004)	(0.005)	(0.005)	(0.005)	(0.007)	(0.008)
Loss	0.018	0.015	0.035**	0.036	−0.004	−0.024
	(0.018)	(0.015)	(0.017)	(0.023)	(0.022)	(0.023)
Tax Assistance	0.043**	0.008	0.011	0.024	0.002	0.032
	(0.019)	(0.022)	(0.022)	(0.018)	(0.039)	(0.023)
Subjective Tax Literacy	−0.027**	−0.014	−0.003	−0.008	−0.039*	−0.026
	(0.014)	(0.013)	(0.019)	(0.020)	(0.023)	(0.028)
Objective Tax Literacy Level 1	−0.015	−0.057***	−0.029**	−0.104***	−0.052**	−0.101***
	(0.012)	(0.012)	(0.014)	(0.020)	(0.022)	(0.028)
Objective Tax Literacy Level 2	−0.028*	−0.098***	−0.024	−0.099***	−0.081***	−0.133***
	(0.015)	(0.021)	(0.018)	(0.021)	(0.027)	(0.030)
Tax Satisfaction	−0.019***	−0.004	−0.003	−0.016**	−0.007	−0.001
	(0.005)	(0.006)	(0.006)	(0.007)	(0.009)	(0.010)
Female	−0.003	−0.005	−0.014	−0.016	0.036	0.027
	(0.012)	(0.014)	(0.016)	(0.016)	(0.026)	(0.029)
Constant	0.150***	0.146***	0.096***	0.168***	0.159***	0.194***
	(0.023)	(0.027)	(0.030)	(0.028)	(0.051)	(0.042)
Observations	345	345	114	114	114	114
Log Likelihood	307.561	289.858	161.574	142.798	115.574	101.061
Wald Test (df = 8)	58.826***	43.746***	26.429***	58.938***	22.626***	29.901***

Notes: This table shows the Tobit regression results of ATR and MTR misperception. The dependent variables in columns (1) and (2) represent the case where corporations report their ATR and MTR on retained profits (ret.), and the dependent variables in columns (3) and (4) represent the case where corporations report their ATR and MTR on distributed profits (dis.). All variables are defined in more detail in the Appendix A2. Robust standard errors are in parentheses. * $p < .1$, ** $p < .05$, *** $p < .01$.